Curriculum Vitae

Sudeep Sarkar

Launch Dean (Interim), Bellini College of Artificial Intelligence, Cybersecurity and Computing

Distinguished University Professor,

Computer Science & Engineering Endowed Chair,

University of South Florida, Tampa

4202 East Fowler Ave., ENG 030

Tampa, Florida 33620

Email: sarkar@usf.edu

https://www.linkedin.com/in/profsudeepsarkar/



November 26, 2026

To teach, to seek, to serve, & to learn.

Academic leader and computer vision researcher with more than three decades of experience at the University of South Florida. Founding leader of the Bellini College of AI, Cybersecurity, and Computing; former Chair of Computer Science and Engineering; principal or co-investigator on more than $26.5 million in sponsored projects; ACM Distinguished Scientist; and Fellow of IEEE, AAAS, IAPR, AIMBE, and the National Academy of Inventors. Research contributions span computer vision, biometrics, video understanding, perceptual organization, and artificial intelligence.

1. Educational Background

Doctor of Philosophy (Electrical Engineering)

- The Ohio State University, Columbus, Ohio, June 1993.
- Dissertation title: *On Computing Perceptual Organization in Computer Vision*.
- Advisor: Prof. Kim L. Boyer.

Master of Science (Electrical Engineering)

- The Ohio State University, Columbus, Ohio, March 1990.
- Thesis: *Optimal, Efficient Detection and Low-Level Perceptual Organization of Edge Features*.
- Advisor: Prof. Kim L. Boyer.

Bachelor of Technology (Electrical Engineering)

- Indian Institute of Technology, Kanpur, India, May 1988.
- Project: *Modeling of flicker noise using autoregressive moving average (ARMA) models: Simulation and Hardware Validation.*
- Project Advisor: Prof R. Sharan.

2. Honors

1. Founder's Award, National Academy of Inventors, 2025.
2. ACM Distinguished Scientist, 2024.
3. Fellow, International (formerly Asia-Pacific) Artificial Intelligence Association, 2022.
4. Distinguished University Professor, 2021.
5. Member of the Academy of Science, Engineering, and Medicine of Florida, 2021.
6. IET Biometrics Journal Premium Award for best paper, 2020.
7. William R. Jones Outstanding Mentor Award, Florida Education Fund, 2017.
8. Fellow of the National Academy of Inventors (NAI), 2016.
9. Computer Science & Engineering Endowed Chair, 2016-current.
10. Fellow of the American Institute for Medical and Biological Engineering (AIMBE), 2016.
11. Best Student Paper Award at the IEEE International Conference on Identity, Security, and Behavior Analysis, 2015.
12. Best Scientific Paper Award at International Conference on Pattern Recognition, 2014.
13. Outstanding Faculty Award, University of South Florida, 2014.
14. Fellow of the American Association for the Advancement of Science (AAAS), 2013.
15. Fellow of the Institute of Electrical and Electronics Engineers (IEEE), 2013.
16. IEEE Computer Society Distinguished Visitor Program Speaker, 2010-2012.
17. Charter Member of the National Academy of Inventors, 2010.
18. Fellow of the International Association for Pattern Recognition (IAPR), 2008.
19. IBM Best Student Paper Award at International Conference on Pattern Recognition, 2006.
20. Askounes-Ashford Distinguished Scholar Award, University of South Florida, 2004.
21. Outstanding Undergraduate Teaching Award, University of South Florida, 1998.
22. Teaching Incentive Program Award, University of South Florida, 1996.
23. CAREER Award, National Science Foundation, 1995.
24. Ohio State University Presidential Fellowship for Doctoral Research, 1992.
25. Outstanding Graduate Research Award, National Council of Graduate Students, 1990.
26. Best Graduating Undergraduate Electrical Engineer, IIT-Kanpur, 1988.
27. Merit Certificate for academic excellence (sophomore and junior), IIT Kanpur, 1986, 1987.
28. National Talent Scholarship by the NCERT, India, 1984.

3. Work Experience

Launch Dean (Interim), Bellini College of Artificial Intelligence, Cybersecurity and Computing, Dec 2024–present

- **Institutional Vision:** Leading strategic development and campus-wide consensus-building to create a dedicated college for AI, Cybersecurity, and Computing.
- **Hub-and-Spoke Architecture:** Leading development of an academic model that integrates AI and computing curricula across all 13 USF colleges and supports transdisciplinary technology education.
- **Organizational Agility:** Established a flat organizational structure designed to enhance operational efficiency and maintain institutional agility within the rapidly evolving AI-based innovation landscape.
- **Launch Scale and Growth:** Opened the college in Fall 2025 with 3,210 students and 69 faculty. Faculty headcount grew about 30%, improving the student-to-faculty ratio from 55:1 to 39:1, and expanded advising capacity improved the student-to-advisor ratio from 399:1 to 226:1.
- **Programmatic Expansion:** Overseeing the expansion of the college's academic portfolio from 10 to 22 active or planned programs, including BS and MS degrees in Artificial Intelligence advanced to the Florida Board of Governors, as well as interdisciplinary majors combining Computer Science with Business, Criminology, Social Sciences, Economics, and Anthropology.
- **Experiential Learning and Career Readiness (tCAP):** Conceived and led the Tech Career Advancement Program (tCAP), a college-wide framework with career coaching, an industry mentorship program, employer engagement, and an experiential learning requirement spanning internships, research, capstones, and applied projects.
- **Student Success and Workforce Development:** Established a dedicated career-advising team, the AI/Cyber Living Learning Community, and experiential courses, and expanded the AI Course Companion and industry-based training with ReliaQuest, which led to full-time employment offers for participating students. Computing and cybersecurity study-abroad participation increased.
- **Capital Development:** Managing the design and planning of a new, state-of-the-art facility supported by the Bellini gift and additional State of Florida funding to house the college's expanding research and educational initiatives.
- **Strategic Fundraising and Development:** Leading philanthropic and state-support initiatives, including stewardship of the $40 million gift from Arnie and Lauren Bellini that established the financial foundation for the college.
- **Outreach and Student Recognition:** CyberBay drew more than 1,000 participants, and students earned national recognition at DEF CON, CyberHawk, and Georgia Tech competitions. K–12 educator programs, youth AI camps, and public AI-literacy initiatives extended the college's impact statewide.

Co-Director, USF Institute for Artificial Intelligence + X, 2019 to present

- **Foundational AI Leadership:** Co-founded the university-level **USF Institute for AI+X**, establishing a transdisciplinary R&D engine for ethical AI applications across healthcare, cybersecurity, and finance.

Chair, Computer Science and Engineering, USF, Dec 2016 – Dec 2024

- **Institutional Scaling:** Led a department of 34 tenure-track faculty, 14 instructors, and seven staff members, overseeing the education of over 2,600 undergraduate and 300 graduate students.
- **Fiscal Management & Growth:** Managed an annual operating budget of $9M and drove a 100% increase in research expenditures over five years, reaching $4.6M annually.
- **Interdisciplinary Program Innovation:** Pioneered the establishment of the BS in Cybersecurity, now ABET-accredited with 650+ students, in collaboration with multiple USF colleges.
- **Cross-College Synergy:** Launched collaborative graduate programs, including the PhD in Big Data Analytics with the Muma College of Business and the MS in Cybersecurity and MS in Data Intelligence degrees with other departments at the College of Engineering.
- **Opening Up Computing:** Created the "Pathway to Computing" program in 2022 to enable students with non-CS backgrounds to transition into the MS in Computer Science, expanding the graduate talent pipeline.
- **Industry Integration:** Established the Computing Partners Program (CPP), a tripartite framework connecting industry partners with student groups to fund high-impact activities like national hackathons and the Grace Hopper Conference.

Associate Vice-President for Special Programs, University of South Florida, 2017-2022

- **Technology Translation:** Led the NSF-funded **I-Corps Site at USF**, transforming deep-science research into commercially viable products and services.
- **National Recognition:** Guided the program to become the nation's top-performing NSF I-Corps Site, successfully institutionalizing the curriculum within the university infrastructure.
- **Mission-Driven Design:** Launched a problem-solving design course based on the DoD's "Hacking for Defense," utilizing lean design principles and mission model canvases.

Distinguished University Professor, University of South Florida, 2021–current

- Teach courses, advise Ph.D./MS/BS students.
- Conduct externally and internally funded research and innovation.
- Engage in international professional activity.

Professor in Computer Science and Engineering, University of South Florida, 2004–2021

Research Associate, WOC, Tampa Veterans Administration R&D, 2017-2021

- Performed as a Co-PI on a DoD-funded research project on the design of a computer vision-based portable AI solution for pressure ulcer wound healing assessment.

Associate VP for Research & Innovation, University of South Florida, 2012-2016

- **Executive Leadership Support:** Assisted the Senior Vice-President for Research & Innovation in managing the university's research enterprise and reporting directly to the University System President.
- **Strategic Research Planning:** Co-led the development of the USF Research Strategic Planning Committee (2015-2016), shaping the long-term vision for the university's research growth.
- **Innovation & Translation Leadership:** Served as the founding Director of the NSF-funded **I-Corps Site at USF**, authoring the successful proposal that earned USF this prestigious national designation.
- **State-Wide Cybersecurity Coordination:** Conceived and managed an **annual Cyber Florida Collaborative Seed Grant Program**, coordinating research efforts across twelve state universities 2014—2021.
- **Interdisciplinary Grant Development:** Coordinated complex, campus-wide interdisciplinary projects, including major grant proposals and large-scale research initiatives.
- **International Research Partnerships:** Played an instrumental role in expanding USF's global footprint by signing the Memorandum of Understanding (MOU) between the USF Research Park and Tecnopuc (PUCRS) in Porto Alegre, Brazil.
- **University-Wide Governance:** Represented the research office on critical system-wide committees, including the STEM Collaborative, Big-Data Curriculum development, and University Budget Re-engineering.

Research Admin Faculty Fellow, University of South Florida, Tampa, 2009 – 2012

- Conceptualized, piloted, and institutionalized the Faculty External Honors, Prizes, and Awards process and infrastructure. It involves cataloging (http://awards.research.usf.edu), tracking, and assisting faculty in seeking external awards and honors that bring prestige both to the faculty member and the institution.

Associate Professor, Computer Sci. & Engg., University of South Florida, 1999 – 2004

Assistant Professor, Computer Sci. & Engg., University of South Florida, 1993 – 1999

4. Professional Affiliations

1. National Academy of Inventors, NAI Fellow
2. American Institute for Medical and Biological Engineering, AIMBE Fellow

3. Institute of Electrical and Electronics Engineers, IEEE Fellow
4. International Association for Pattern Recognition, IAPR Fellow
5. American Association for the Advancement of Science, AAAS Fellow
6. Member of the Association for Computing Machinery (ACM)
7. Member of SPIE, the international society of optics and photonics
8. Member of IEEE Computer Society

5. Post-Doctoral Scholars

1. Mauricio Pamplona Segundo, "Predictive Self-Supervised Learning of Graph Structures," 04/2020-07/2021
2. Michal Balazia, "Human Motion and Activity Analysis," 05/2018 to 05/2019
3. Rodrigo Minetto, "Functional Analysis of Satellite Images," 06/2017 to 07/2018
4. Mauricio Pamplona Segundo, "Deep Learning and Semantic Understanding," 04/2017-04/2018
5. Guillermo Camara Chavez, "Video understanding," 08/2015 - 08/2016.

6. Students Advised

Current students:

1. Ahmed Shahabaz, Ph.D. Candidate, January 2020-
2. Sujal Tiru Vijayaraghavan, Ph.D. Candidate, January 2021-
3. Lucas Miller, Ph.D. Candidate, August 2025-
4. Carl Ayala, Ph.D. Student, January 2025-
5. Sudip Chakrabarty, Ph.D. Student, August 2026-

Doctoral Students Graduated:

1. Gilbert Rotich, Ph. D., "Geospatial Understanding of Foundation Models: Self-Supervision, Robustness, and Resource-Constrained Learning," 2026.
2. Cole Hill, Ph.D., "Dynamics-Consistent Representation Learning for Human Motion Analysis and Identification," 2025 (Meta, CA).
3. Ramy Mounir, Ph.D., "On the Role of Prediction in Streaming Hierarchical Learning," 2024 (Numenta, CA).
4. Sathyanarayanan Aakur, Ph.D., "Beyond Labels and Captions: Contextualizing Grounded Semantics for Explainable Visual Interpretation," 2019 (Auburn University).
5. Ravi Subramanian, Ph.D., "Orientation Invariance Methods for Inertial Gait," 2018 (L3 Communications).
6. Earnest Hansley, Ph.D., "Identification of Individuals from Ears in Real-World Conditions," 2018 (US Army).

7. Fillipe de Souza, Ph.D., "Semantic Description of Activities in Videos." 2017 (Intel Inc.)
8. Ravi Panchumarthy, Ph.D., "Direct Solutions to Perceptual Organization Problems," 2015 (Intel Inc).
9. Ravi Kiran Krishnan, PhD., "Generalized Conditional Matching Algorithm for Ordered and Unordered Sets," 2014 (Unifi Software).
10. Kester Duncan, PhD., "Scene-Dependent Human Intention Recognition for an Assistive Robotic System," 2014 (Object Video).
11. Aveek Brahmachari, PhD., "Basal Graph Structures for Geometry Based Organization of Wide-Baseline Image Collections," 2012 (Samsung).
12. Saumya P. Amarasiri, PhD., (co-major advisor with Dr. Gunaratne), "Use of Innovative Computer Technology and Optical Texture Properties in the Analysis of Pavement Digital Images," 2011 (Geotechnical Engineer, Radise International).
13. Vasant Manohar, PhD., (co-major advisor with Dr. Goldgof), "Facial Skin Motion Properties from Video: Modeling and Applications," 2009 (Raytheon BBN Technologies).
14. Himanshu Vajaria, PhD., (co-major advisor with Dr. Kasturi), Dissertation, "Diarization, Localization and Indexing of Meeting Archives," 2008 (Photon-X).
15. Ruiduo Yang, Ph.D., Dissertation, "Dynamic programming with multiple candidates and its applications to sign language and hand gesture recognition," 2007 (Qualcomm, Google).
16. Sunita Nayak, Ph.D., Dissertation, "Representation and Learning in Recognition of Sign Language," 2007 (Photometria Inc.).
17. Pranab Mohanty, Ph.D. (co-major advisor with Dr. Kasturi), Dissertation, "Learning from Biometric Distances: Performance and Security Related Issues in Face Recognition Systems," 2007 (Aware Inc., Amazon).
18. Duminda Randeniya, Ph.D. (co-major advisor with Dr. Gunaratne), Dissertation, "Automatic Geo-Referencing by Integrating Camera Vision and Inertial Measurements," 2007 (Oak Ridge National Labs.).
19. Nivedita Das, Ph.D. (co-major advisor with Dr. Ashmawy), Dissertation: "Modeling Three-Dimensional Shape of Sand Grains Using Discrete Element Method," 2007, (GEI Consultants Inc.).
20. Yong Zhang, Ph.D. (co-major advisor with Dr. Goldgof) Dissertation: "Robust algorithms for property recovery in motion modeling, medical imaging and biometrics," 2005. (Associate Professor at Youngstown University).
21. Zongyi Liu, Ph.D., Dissertation: "Gait-based human recognition at a distance performance, covariate impact and solutions," Nov. 2004 (Amazon.com, Google Inc., Microsoft).
22. Padmanabhan Soundarajan, Ph.D., Dissertation: "Core issues in graph-based perceptual organization: Spectral cut measures, Learning," April 2004 (Neilsen Media Research).
23. Isidro Robledo-Vega, Ph.D., Dissertation: "Motion models based on statistics of feature relations: Human Identification from Gait," Sept 2002 (Faculty at the Instituto Technologico de Chihuahua, Mexico).

24. Mark Powell, Ph.D., Dissertation: "Towards objective color from images," Nov 2000, (Jet Propulsion Labs, California) (USF Outstanding Dissertation Award).
25. Leonid Tsap, Ph.D. (co-major with Dr. Goldgof), Dissertation: "Physically-based modeling of nonrigid motion in biomechanics problems," Spr. 1999. (Lawrence Livermore National Labs, National Institutes of Health) (USF Outstanding Dissertation Award).

Master's Students Graduated:

1. Lucas Miller, MS Thesis, "Edge-Streamer: A Lightweight, Self-Supervised Event Segmentation Model by Lucas Miller," Summer 2025. (PhD at USF)
2. Sneha Oladhri, MS Thesis: "A Study of Deep Learning Silhouette Extractors for Gait Recognition," Fall 2022. (Walmart Research)
3. Cole Hill, MS Thesis: "Automatic Detection of Vehicles in Satellite Images for Economic Monitoring," Spring 2021. (Ph.D. at USF).
4. Owen Watson, MS Thesis: "Full 3D Reconstruction from Multiple RGB-D Cameras," Spring 2013.
5. Ravi Kiran Krishnan, MS Thesis: "Detecting Group Turns of Speaker Groups in Meeting Room Conversations using Audio-Video Change Scale Space," Summer 2010, (Ph.D. at USF).
6. Kester Duncan, MS Thesis: "Relational Entropy-based Measure of Saliency," Summer 2010, (Ph.D. program at USF).
7. Aveek Brahmachari, MS Thesis: "BLOGS: Balanced Local and Global Search for Non-degenerate Two-view Epipolar Geometry, Summer 2009, (Ph.D. program at USF).
8. Brendan Klare, MS, Thesis: "Background Subtraction using Ensembles of Classifiers with an Extended Feature Set," Summer 2008.
9. Sunil Ravulapalli, MS, Thesis: "Association of Sound to Motion in Video using Perceptual Organization," Spring 2006.
10. Amit Khemlani, MS, Thesis: "Counting of mostly static people in indoor conditions," 2004.
11. Soumee Chaudhari, MS, Thesis: "Modeling distance functions induced by face recognition algorithms," Nov 2004.
12. Ayush Parashar, MS, Thesis: "Representation and Interpretation of Manual and Non-manuals Information for Automated American Sign Language Recognition," July 2003. (Oracle Corp.).
13. Laura Malave, MS, Thesis: "Silhouette based gait recognition: Research Resource and Limits," July 2003. (Ph.D. Student at USF).
14. Lakshmi Reguna, MS, Thesis: "An In-depth Analysis of Face Recognition Algorithms using Affine approximations," May 2003. (Cyberguard, Florida).
15. Barnabas Victor, MS, (co-major with Dr. Bowyer), Thesis: "Image-based ear biometrics," Sept 2002. (ISSICAD/Cambio networks).
16. Nikhil Kelshikar, MS, Thesis: "Issues in volume computation using Cyberware range scanner," Sept. 2001. (GRASP Lab., UPenn).

17. Li Zhou, MS (co-major with Dr. Goldgof), Thesis: "Computer aided image analysis of skin histology images," Nov 2000.
18. Yong Zhang, MS, (co-major with Dr. Goldgof), Thesis: "A physical model-based motion recovery algorithm and its applications in computer vision and imaging," Nov 2000. (Completed Ph.D. at USF).
19. Kishore Korimilli, MS, Thesis: "Motion segmentation based on perceptual organization of spatio-temporal volumes," Sept. 1999 (IBM).
20. Srikanth Chavali, MS, Thesis: "Encoding the parameter space behavior of vision algorithms using Parameter Dependence Networks," Aug 1998 (Nortel Networks, Texas).
21. Hariprasad Janardana, MS, Thesis: "Experiments with a new structural similarity measure for image databases," July 1998 (Data Base Technologies, Boca Raton).
22. Sriprakash Sainath, MS, Thesis: "Approximate algorithms for matching image structures captured using Random Parametric Structural Descriptions," May 1998. (Motorola, Chicago).
23. Vinod Kannan, MS, Thesis: "Delineation of scars and volume estimation using range data," April 1997 (Motorola, Chicago).
24. Sudhir Borra, MS, Thesis: "Quantitative performance evaluation of perceptual organization modules in the context of object recognition," July 1996 (Worldres, California).
25. Nina Saxena, MS, (co-major with Dr. Ranganathan) Thesis: "Mapping and parallel implementation of Bayesian Belief networks," Dec. 1995 (Ph.D. - U Texas at Austin).
26. Barry Sheppard, MS, Project: "A fast technique for extracting motion parameters from motion-blurred images," Sept. 1995 (Texas Instruments).

Undergraduate Students (REUs, Senior Projects, etc.)

1. Harshit Suri, 2025, 2026.
2. Mina Can, 2019, 2020, 2021
3. Daniel Sawyer, 2016, 2017, 2018
4. Manal Benyamine, 2016.
5. Jason Melancon, 2014.
6. Thomas Dietert, 2014.
7. Juan Lujan, 2014.
8. Andrew Messier, 2009.
9. Jeremy White, 2008.
10. Michele McLean, 2006-2007.
11. Oluwabukola Akinbo, 2006 (graduate studies at USF).
12. Melinda Black, 2006.
13. Eric Adams, 2005-2006.

14. Adebola Osuntogun, (went for graduate studies at Georgia Tech.), 2003-2005.
15. Laura Malave (continued graduate studies at USF), 2001-2002.
16. Christine Bexley (went for graduate studies at Notre Dame Univ.), 2001-2002.
17. Christine Kranenbru, 2001-2002.
18. Kenny Radfar, 1997.
19. Matt Galvin, 1997.

7. Departmental, College, and University Services

1. **Co-Chair, USF Council on Artificial Intelligence, 2026-**
2. **Chair, USF Vice President of Research Search Committee, 2025-2026**.
3. Co-Chair, USF Task Force for forming the College of Computing, Artificial Intelligence, and Cybersecurity, 2024.
4. Member, USF Aspire Alliance Task Force, 2020.
5. Member, USF Initiative on Microbiomes, Leadership Committee, 2019-20.
6. Member, USF Faculty Success Strategic Initiative Workgroup, 2019.
7. Member, USF Tampa 2018-2023 Strategic Plan Committee, 2017-18.
8. Member, USF System STEM Communication Committee, 2017-2018.
9. Co-Chair, USF System Research Strategic Planning, 2015-2016.
10. Member, University Budget Re-Engineering Committee, 2013-2016.
11. Member, USF System STEM Collaborative, 2014-2016.
12. Member, USF System Big Data Analytics Curriculum Committee, 2014-2016.
13. Interim Graduate Program Director, 2009.
14. Chair, College of Engineering Faculty Governance Committee, 2010-2011.
15. Member, College of Engineering Faculty Governance Committee, 2008-2010.
16. Chair, Departmental Awards and Honors Committee, 2007-2015.
17. Chair/Co-chair of Departmental Faculty Hiring Committee, 2004-2005, 2008-2009.
18. Chair, Departmental Tenure and Promotion Committee, 2006.
19. Chair of the Departmental Committee on Bioinformatics, 2000-2006.
20. Chair of the Ph.D./MS qualifying examination committee, 1998-1999.
21. Departmental Faculty Mentoring Committee, 2008-2011.
22. Departmental Faculty Evaluation Committee, 2007-2008, 2011-2012, 2013-2014.
23. Member, ABET Continuous Evaluation Committee, 2006-2009.
24. Member of Graduate Admissions Committee, 1998-2009.

25. Member of 5yr/10yr Planning Committee, 1998-2000.
26. Member of the College Computer Committee, 1999-2000.
27. Served as a member of the Undergraduate Curriculum Committee, 1998.
28. Medical imaging track advisor Biomedical program in the College of Engineering, 2000-2004.
29. Member of the University Sabbatical Committee, 2002-2004.
30. Member of the University Standing Committee on Research Misconduct, 1999-2004.

8. Professional and External Services

Leadership Capacities

1. **Board of Directors, National Academy of Inventors, 2013-current**.
2. **General Co-chair, IEEE Winter Conference on Application of Computer Vision (WACV)**, 2017, **2027**.
3. General Co-Chair IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR), 2024.
4. Chair, IEEE Biometrics Council Fellows Committee, 2023-2024
5. General Co-Chair, Indian Conference on Computer Vision, Graphics and Image Processing (ICVGIP), 2023.
6. President, IEEE Council for Biometrics, 2019-2020.
7. President-Elect, IEEE Council for Biometrics, 2018.
8. General Co-chair, IEEE Conference on Face and Gesture Recognition, 2019.
9. General Co-chair, IEEE Conference on Biometrics: Theory, Application, and Systems, 2019
10. Chair for Conferences, IAPR TC4 – Technical Committee on Biometrics, 2017.
11. Chair, Program Committee, Annual National Academy of Inventors Conference, 2016.
12. Board of Trustees, Southeastern Universities Research Association (SURA), 2013 – 2020.
13. Vice-president for Conferences, IEEE Biometrics Council, 2012-2014, 2014-2016.
14. Program Manager, Cyber Florida Seed Grant and Capacity Building Programs, 2014-2021.
15. Chair, IAPR Fellow Committee, 2014-2016.
16. Program Co-chair, IEEE Winter Conference on Application of Computer Vision (WACV), 2015.
17. General Co-chair, IEEE International Joint Conference on Biometrics (IJCB), 2014.
18. IAPR Publications and Publicity Committee, 2014-2016.
19. General Co-chair, IEEE Workshop on Applications of Computer Vision (WACV), 2013.
20. Associate Director, NASA Florida Space Grant Consortium, 2013-2014.
21. Program Co-chair, SIBGRAPI 2012: Conference on Graphics, Patterns and Images, 2012.

22. IEEE Computer Society Technical and Conference Activities Board (T&C Board) Executive Committee (ExCom) At-Large member (2011-2012).
23. Chair of the IEEE-CS Technical Committee on Pattern Analysis and Machine Intelligence (PAMI-TC), 2010-2012.
24. Governing Board, International Association for Pattern Recognition, 2010-2012.
25. Program Co-chair, IEEE Conference on Biometrics: Theory, Application, and Systems, 2010
26. Representative of the Systems, Man and Cybernetics Society to the IEEE Biometrics Council, 2008-2011.
27. Local Arrangements Co-chair, International Conference on Pattern Recognition, 2008.
28. IAPR Standing Committee on Education 2006-2010, 2011-2015
29. Co-chair of IEEE Workshop in Empirical Evaluation Methods in Computer Vision, 2005.
30. General co-chair of the NSF sponsored Second Workshop on Perceptual Organization in Computer Vision, Corfu, Sept. 1999.
31. General co-chair of the First IEEE Workshop on Perceptual Organization in Computer Vision, Santa Barbara, June 1998.
32. Local Arrangements Chair for IEEE Workshop on Applications of Computer Vision, 1996.

Editorial

1. Co-Editor-in-Chief for Pattern Recognition Letters, 2011 to 2025.
2. Series Editor for Computer Vision and Pattern Recognition Series, Elsevier and Academic Press, 2016--2019
3. Associate Editor of
    a. IEEE Transactions of Pattern Analysis and Machine Intelligence, 1999-2003, 2011-2017.
    b. IET Computer Vision, 2008—2012.
    c. Image and Vision Computing, 2008-2010.
    d. Editorial Board of the Pattern Recognition journal, 2006—2010.
    e. IEEE Transactions on Systems, Man, and Cybernetics: Part B, 2004–-2010
    f. Pattern Recognition Journal, 1999-2006
    g. Pattern Analysis and Applications Journal, 1999-2001.
4. Track Co-Chair for Computer Vision and Robot Vision, International Conference on Pattern Recognition (ICPR), 2016.
5. Track Co-Chair for Pattern Recognition and Machine Learning, International Conference on Pattern Recognition (ICPR), 2014.
6. **Senior Program Committee**

a. **40th AAAI Conference on Artificial Intelligence, AAAI, 2026**.

7. **Area Chair for**
    a. British Machine Vision Conference (BMVC), 2015, 2016.
    b. European Conference on Computer Vision (ECCV), 2014.
    c. IEEE Conference on Automated Face and Gesture Recognition, 2011, 2013, 2015.
    d. International Conference on Pattern Recognition (ICPR), 2010, 2012, 2018
    e. IEEE/CVF International Conference on Computer Vision, (ICCV), 2007.
    f. IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR), 2003, 2004, 2012, 2014, 2019, 2020, 2023.
8. Guest co-editor of
    a. Special Issue on Distance Metric Learning for Pattern Recognition, *Pattern Recognition* Journal, 2017.
    b. Special Issue of Pattern Recognition Letters on SIBGRAPI – Advances in Pattern Recognition and Computer Vision, March 2014.
    c. Special Issue of Computer Vision and Image Understanding on Perceptual Organization in Computer Vision, Oct 1999.
9. Tutorial Chair for International Conference on Pattern Recognition, 2020.

Advisory Committee

1. **6th International Conference on Computer Vision & Machine Intelligence, India (CVMI-2027)**
2. International Conference on Computer Vision & Image Processing (CVIP-2020, 2021, 2022, 2024)
3. 9th International Conference on Advances in Pattern Recognition (ICAPR 2017)

Committees: Conference and others

1. **ACM Distinguished Member Selection Committee 2023-2027.**
2. IEEE Conf. on Computer Vision & Pattern Recognition (CVPR), 1997, 1998, 1999, 2000, 2001, 2008, 2009, 2010, 2011, 2018, 2021.
3. 29th International Joint Conference on Artificial Intelligence (IJCAI), Japan, 2020
4. Conference on Neural Information Processing Systems (NeurIPS), 2020
5. IEEE Workshop on Human Activity Detection in Multi-Camera, Continuous, Long-Duration Video at WACV, 2019, 2020, 2021.
6. IEEE International Workshop on Bias Estimation in Face Analytics (BEFA), 2019
7. International Conference on Pattern Recognition and Machine Intelligence, 2019.
8. Irish Machine Vision and Image Processing Conference 2011, 2014, 2015, 2016, 2017, 2018.

9. Annual National Academy of Inventors Meeting 2013, 2014, 2015, 2016, 2017.
10. International Workshop on Understanding Human Activities through 3D Sensors 2016, 2018.
11. International Workshop on Biometrics in The Wild (B-Wild), 2015.
12. International Workshop on Face and Facial Expression Recognition from Real World Videos, 2014, 2018.
13. 3rd Asian Conference on Pattern Recognition, International Liaison Chair, 2015.
14. SIBGRAPI - Conference on Graphics, Patterns and Images, Brazil, 2011, 2013, 2014.
15. ICCV'13 Workshop on Computer Vision for Converging Perspectives, 2013.
16. International Workshop on Image Mining: Theory and Applications (IMTA), 2013
17. IAPR Intl Workshop on Depth Image Analysis, 2012
18. IAPR Intl Workshops on Structural and Syntactic Pattern Recognition (S+SSPR) 2010, 2012.
19. IEEE Workshop on Gesture Recognition at CVPR, 2011, 2012.
20. IEEE International Joint Conference on Biometrics, 2011
21. IEEE Conference on Biometrics: Applications, Theory, and Systems, 2007, 2008, 2009, 2012.
22. IEEE International Conference on Computer Vision (ICCV), 2003, 2005, 2009.
23. International Conference on Pattern Recognition (ICPR), 2002, 2004, 2006, 2008, 2010.
24. European Conference on Computer Vision, ECCV, 2008.
25. Intl. Conf. on Computer Analysis of Images and Patterns (CAIP), 2009, 2011, 2013, 2015, 2017, 2018.
26. IEEE Conference on Systems, Man, and Cybernetics, 2007, 2008.
27. International Symposium on Visual Computing, 2008.
28. Conference on Audio-and Video-based Biometric Person Authentication, 2005.
29. SPIE International Symposium on Defense and Security: Biometric Technology for Human Identification, 2004, 2005, 2006, 2007, 2008, 2009.
30. Workshop Energy Minimization Methods in Computer Vision &Pattern Recognition, 2005.
31. IEEE Workshop on Perceptual Organization in Computer Vision, 2001, 2004, 2006, 2008, 2010, 2012.
32. Indian Conference on Computer Vision, Graphics, and Image Processing (ICVGIP), 1998.
33. IEEE Workshop on Empirical Performance Evaluation, 1998, 2001.
34. IEEE Workshop on Biomedical Image Analysis, June 1998.
35. IEEE International Conference on Tools with Artificial Intelligence, 1997.
36. IEEE International Symposium on Computer Vision, Coral Gables, Florida, 1995.

9. Education Grants

1. **Implementation grant for Interdisciplinary computing degrees**, Northeastern University CIC, $281,000, 2025-27 (Sarkar).
2. **Planning grant for Interdisciplinary computing degrees**, Northeastern University CIC, $100,000, 2023-24 (Sarkar).
3. **Expanding the pipeline of Cyber/IT workforce in the Tampa Bay area,** Florida Department of Education and the Florida Center for Cybersecurity, $1,390,000, 2022-2023 (Chellappan, Christensen, Pazos-Revilla, Batson, Sarkar).
4. **Case Studies in Wiki-enhanced Social Scribing of Lectures,** USF's Center for 21st Century Teaching Excellence, IL-CG grant, $4000, 2009-2010.
5. **Enhancing Undergraduate Computer Science Curriculum through Image Computations**, National Science Foundation, 1/1/00 to 12/31/02, amount $75,205. (Principal Investigator) (Co-PIs: D. Goldgof, K. W. Bowyer).

10. Education-Related Publications/Tutorials

1. J. Anderson, X. Ou, S. Sarkar, and J. Wang, "Pathway to Computing: an Innovative Approach to Inviting Non-Computing Students Into Graduate Computer Science Programs," *Frontiers in Education* (FIE), Nov. 2025.
2. J. Wang, Z. Beasley, K. Christensen, S. Sarkar, "Increasing Participation in Computer Science and Engineering: A Systematic Approach for Culture Change," *Annual Conference of the American Society for Engineering Education (ASEE)*, July 2021.
3. F. de Souza, S. Sarkar, A. Srivatsava, "Gentle Introduction to General Pattern Theory and its Application to Video Event Analysis, Tutorial at *28th Conference on Graphics, Patterns, and Images (SIBGRAPI)*, Salvador, Brazil, 2015.
4. S. Sarkar, "Biometrics for Recognition at a Distance," Developed exclusively for IEEE eLearning Library, *IEEE Educational Activities*, 2010, ISBN: 978-1-4244-6203-2.
5. **S. Sarkar**, "Wiki-enhanced social scribing of lectures: A case study in an undergraduate course," *Frontiers in Education Conference*, 2009, (oral).
6. S. Sarkar, "Evaluation of Effectiveness of Incorporation of Computer Vision into Undergraduate Data Structures," *IEEE Workshop on Combined Research-Curriculum Development in Computer Vision*, Dec. 2001, (oral).
7. S. Sarkar and D. G. Goldgof, "Integrating Image Computation in Undergraduate Level Data Structures Education," Special Issue on Education in the *International Journal on Pattern Recognition and Artificial Intelligence*, vol. 12, no. 8, pp. 1071–1080, 1998.
8. S. Sarkar and D. G. Goldgof, "Integrating Undergraduate Level Data Structures Education and Image Computation," in *IEEE Computer Society Workshop on Undergraduate Education & Image Computation*, June 1997, (oral).

11. Courses Taught

1. Data Structures (EEL 4851), Fall 1993; Spr 1994; Fall 1994; Spr 1995; Fall 1995; Spr 1996; Fall 1996; Fall 1997; Fall 1998; Sum 1999; Fall 1999; Spr 2001; Spr 2004; Fall 2004; Fall 2005; Fall 2007; Fall 2008; Spr 2009.
2. Introduction to Computational Geometry (CIS 4521), offered in Fall 1996, Spr 1998, Spr 1999, Fall 2000, Fall 2002, Spr 2007, Spr 2008, Fall 2009, Fall 2011, and Fall 2017.
3. Graduate Computer Vision (CAP 6410), Spr 1994, Spr 1995, Spr 1997, Spr 1998, Spr 2001, Spr 2003, Spr 2004, Spr 2005, Spr 2006, Spr 2008, Spr 2019, Spr 2020, Spr 2021, Spr 2023, Spr 2024, Spr 2025, Fall 2025, Fall 2026.
4. Undergraduate Computer Vision (CAP 4410), Fall 2021.
5. Digital Image Processing (CAP 5400), Fall 1995, Fall 1999, Fall 2001
6. Ethical Issues (CIS 4250), Spring 1997, Fall 1997, Fall 1998, Spr 1999, Fall 2000.
7. Image-based Biometrics (CIS 6930), Spr 2002.
8. Probabilistic Inference, Modeling, and Estimation (CIS 6930), Fall 2006, Fall 2008, Spr 2011
9. Pattern Recognition (CAP 6638), Fall 2003.
10. Unix C for Non-majors (CIS 6930), Spring 1994, Fall 1994.

12. Grants and Contracts (> $26.5 million in total)

Current

1. Integrated Generative AI and Active Inference for Resilient Decision-Making in Multi-Domain Operations, **U.S. Army Combat Capabilities Development Command Analysis Center (DEVCOM DAC),** 2026-2027, $1,750,000, (USF PI: **Sarkar**, Co-PIs: Hall, Licato, Mali, Segundo-Pamplona, Neal, Chhabra, and Kim)
2. Artificial Intelligence (AI)/Cyber Makerspace Equipment Acquisition and Installation, **National Institute of Standards and Technology (NIST)**, 2026-2028, $2,000,000 (PI: **Sarkar**, Co-PIs: Rauscher, Hall, Karam, Kermani).
3. Security Operations Center, **National Institute of Standards and Technology (NIST)**, 2026-2028, $1,300,000 (PI: Chellappan, Co-PIs: **Sarkar**, Ou, Rauscher, Pazos-Revilla, Caulkins).
4. NSF I-Corps Hub (Track 1): Southeast Region (Georgia Tech lead), **National Science Foundation**, 2025-2029, $1,563,916 (USF portion) (USF PI: Mohapatra, Co-PI: **Sarkar**)
5. CUE-T: A Study of the Creation of Interdisciplinary Computing Majors - Their Implementation and Impact on Broadening Participation in Computing at 10 Public Universities, **National Science Foundation**, $150,000 (USF Portion), 2024-2027, (PI: Carla Brodley@NU, USF PI: **Sarkar**, others)
6. Implementation grant for Interdisciplinary computing degrees, **Northeastern University CIC**, $281,000, 2025-27 (**Sarkar**).

Past

1. Understanding Events from Streaming Video - Joint Deep and Graph Representations, Commonsense Priors, and Predictive Learning, **National Science Foundation**, Grant # IIS1956050 (1955154 1955230), 2020-2026, $1,005,543 (**Sarkar**, Srivastava (FSU), Aakur (OSU)).
2. Testing & Evaluation for Soldier-Device Teaming Compatibility, Vulnerability, and Durability in Emergent Situations, **US Army DEVCOM Data & Analysis Center (DAC)/KRI Northeastern**, $5,000,000, 2022-2025 (**Sarkar**, Licato, Das).
3. I-Corps Sites: Type II - I-Corps Site at University of South Florida Tampa, **National Science Foundation**, 2018-2025, $160,000 (**Sarkar**, Thomas, Lai-Yuen, Mullarkey).
4. Planning grant for Interdisciplinary computing degrees, Northeastern University CIC, $100,000, 2023-24 (Sarkar).
5. Distant Observation Enhancement and Recognition System (DOERS), **Intelligence Advanced Research Projects Activity (IARPA)/Kitware**, $687,752, 2021-2024 (**Sarkar**).
6. EAGER: SaTC AI-Cybersecurity: Faking It: Facilitating Public Awareness of Cybersecurity Issues in AI, **National Science Foundation**, $300,000, 2021-2024 (Fisk, **Sarkar**, Chellappan).
7. Broadening Participation in Computer Science and Engineering at University of South Florida, **NEU CIC/Pivotal Ventures**, $579,737, 2020-2024, (**Sarkar**, Jing, Christensen).
8. Expanding the pipeline of Cyber/IT workforce in the Tampa Bay area, **Florida Department of Education and the Florida Center for Cybersecurity**, $1,390,000, 2022-2023 (Chellappan, Christensen, Pazos-Revilla, Batson, **Sarkar**).
9. I-Corps Sites: University of South Florida: Catalyzing Research Translation, **National Science Foundation**, 2015-2024, $359,946 (**Sarkar**, Thomas, Lai-Yuen, Fountain).
10. M3X: Achieving Autonomy by Learning from Sensor-Assisted Control in a Wheelchair-Based Human-Robot Collaborative System, **National Science Foundation**, 2018-2024, $512,383 (Dubey, **Sarkar**, Reed, Alqasemi).
11. Solutions for Automated Video Deep Fake Detection, **Defense Intelligence Agency/NSA**, Contract# HHM402-10-C-0032, 2020-2021, $904,980 (Canavan, Hall, Goldgof, **Sarkar**, Rosen).
12. An Automated Pressure Ulcer Monitoring System to Improve Pressure Ulcer Healing Outcomes for Veterans with SCI, DoD**/Veterans Administration**, 2016-2021, $185,983 (Goldgof, **Sarkar**, Yu).
13. COVID-19 Economic Recovery Markers from Satellite Imagery for City-Scale Decisions, **USF COVID-19 Rapid Response Grant Program**, 2020-2021, $25,000 (**Sarkar**, Segundo, Patatoukas, Katona, Dixon).
14. Startup of USF Institute for Artificial Intelligence, USF Strategic Investment Pool Award, 2019-2020, $120,000 (Sarkar, Hall).
15. II-New: A Research Platform for Heterogeneous, Massively Parallel Computing, **National Science Foundation**, 2015-2019, $679,798 (Tu, Ligatti, **Sarkar**, Ghosh, Pandit).

16. MRI: Acquisition of a CAREN Virtual Reality System for Collaborative Research in Assistive and Rehabilitation Technologies, **National Science Foundation**, 2012-2019, $450,000 (Dubey, **Sarkar**, Quillen, Diamond).
17. i6 Challenge Grant Tampa Bay FirstWave Venture Center EXPANSION, Office of Innovation and Entrepreneurship, Economic Development Administration, **U.S. Department of Commerce**, 2015-2018, (Olson at Tampa Bay WaVE, USF: Sanberg, McDevitt, **Sarkar**), $1,000,000.
18. I-Corps: Semantic Video—From Video to Descriptions, **National Science Foundation**, 2016-2017, (Sarkar, Souza, Galvin), $50,000.
19. Ontology-based Perceptual Organization of Audio-Video Events using Pattern Theory, National Science Foundation, 2012—2016, $ 497,491 (**Sarkar** at USF, Srivatsava at FSU).
20. Support for National Academy of Inventors Annual Meeting, the **Lemelson Foundation**, 2013—2016, (**Sarkar**) $75,000.
21. i6 Challenge Grant Tampa Bay FirstWave Venture Center, Office of Innovation and Entrepreneurship, Economic Development Administration, **U.S. Department of Commerce**, 2012-2015, (Olson, Tampa Bay WaVE, USF: Sanberg, McDevitt, **Sarkar**), $1,000,000.
22. Joint Physiological and Behavioral Biometrics-Based Authentication from Mobile Device Dynamics, DARPA Active Authentication/AFRL/SRI, 2013-2014, $165,000 (Co-PI Labrador).
23. Support for 2nd Conference of the National Academy of Inventors, **Oak Ridge Associated Universities, ORAU**, 2012-2013, $2,000.
24. AWS in Education Research Grant, Gait Challenge on the Cloud, **Amazon.com**, 2011-2013, $7,500 (usage credits).
25. Inaugural Conference of the National Academy of Inventors, **USF Conference Support**, 2012-2012, $10,000
26. Inaugural Conference of the National Academy of Inventors, **Oak Ridge Associated Universities, ORAU**, 2011-2012, $4,000.
27. National Academy of Inventors Project, **NAI Inc.**, 2011—2012, $43,500.
28. iSIMON: Sign Language Learning Monitor, **College of Engineering Interdisciplinary Scholarship**, $30,000, 2011-2012, (Co-PI: Barbara Loeding).
29. Energy Minimization Computing using Field Coupled Nanomagnets, **National Science Foundation**, 2008—2012, $250,000 (Co-PI: Sanjukta Bhanja).
30. **Case Studies in Wiki-enhanced Social Scribing of Lectures,** USF's Center for 21st Century Teaching Excellence, IL-CG grant, $4000, 2009-2010.
31. Avatar DNA using Biometrics and User Access Controls, **Raytheon**, 2008-2010, $90,000. (**Sarkar**, Ligatti)
32. Recognition of Sign Language Patterns, **Center for Pattern Recognition, University of South Florida**, 2007-2009, $140,000 (**Sarkar**, Loeding)
33. Investigation of Automated and Interactive Crack Measurements, **Florida Department of Transportation**, (Gunaratne, **Sarkar**), 2007-2008, $146,184.

34. Face Recognition Algorithm Modeling in FRGC, **Unisys Corporation and Intelligence Technology Innovation Center (ITIC) within the CIA**, 2006, $66,950, (**Sarkar**)

35. Aided Navigation: Theory and Applications for Sensors and Architectures, **STTR, Air Force Office of Scientific Research**, 2006-2007, $30,000 (with Scientific Systems Company, Inc.)

36. ITR: Fundamental Issues in Automated American Sign Language Recognition, **National Science Foundation**, 2003-2007, amount $397,849. (**Sarkar**, Loeding)

37. Collaborative Research: Three-Dimensional Characterization and Modeling of Angular Materials, **National Science Foundation**, 2003-2006, amount $213,006. (Ashmawy, **Sarkar**)

38. Biometrics Technology Study, **US Army and STS International**, Aug 2003 to May 2005, amount $800,000 (Kasturi, **Sarkar**)

39. Outdoor Biometrics for Video Surveillance, **National Science Foundation I/UCRC,** 2005, $70,000 (**Sarkar**, Kasturi and Goldgof)

40. Collision Avoidance for UAVs, **National Science Foundation I/UCRC**, 2005, $70,000 (Co-PI) (Kasturi, **Sarkar**, Goldgof)

41. ITR/AP Collaborative Research: A simulation-based computational approach using machine learning to study stochastic business games, **National Science Foundation**, 9/1/2001 to 8/31/2004, amount: $210,001. (Das, **Sarkar**).

42. Passive Counting of People, **Nielsen Media Research**, 2003-2004, $30,000, 2003-2004. (**Sarkar**)

43. Data Sets, Performance Metrics, and Baseline Algorithms for Human Identification at a Distance, **DARPA**, 2002-2004, amount $363,372. (**Sarkar**)

44. CISE Research Resources: A compute-intensive sensor-based environment for research in Computer Vision and Artificial Intelligence, **National Science Foundation**, 9/15/2001 to 8/31/2003, amount: $149,713 + $72,000 USF match. (**Sarkar**, Goldgof, Hall, Fink)

45. Automated Quantification of Melanoma, **US Army Advanced Detection Center, Moffit Cancer Center,** USF, 8/1/01 to 7/30/03, amount: $77,000. (**Sarkar**, Goldgof)

46. The Role of Learning in Perceptual Organization of Complex Images, **National Science Foundation**, 08/15/99 to 7/31/03, amount $225,663. (**Sarkar**)

47. Enhancing Undergraduate Computer Science Curriculum through Image Computations, **National Science Foundation**, 1/1/00 to 12/31/01, amount $75,205. (**Sarkar**, Goldgof, Bowyer).

48. Workshop on Perceptual Organization in Computer Vision: Assessing the State of Art and Charting New Directions, **National Science Foundation**, Sept 1999, $30,000. (Boyer, **Sarkar**)

49. Transitional Year Biomedical Research Grant, **The Whitaker Foundation**, 05/01/99 to 04/30/00, amount: $69,952. (**Sarkar**)

50. Segmentation and Combination of Range Data using Color-Texture Information, **Sandia National Laboratories**, 8/1/98 to 8/30/99, amount $30,000. (**Sarkar**, Goldgof)

51. Research Instrumentation Award: Computer Server, **National Science Foundation**, 1/1/98 to 12/31/98, amount $87,848. (Bowyer, **Sarkar**, Goldgof)

52. Major Research Instrumentation Grant, **National Science Foundation**, 8/15/97 to 7/31/98, amount: $164,282. (Principal Investigator) (**Sarkar**, Goldgof, Bowyer, Piegl)
53. Biomedical Research Grant, **The Whitaker Foundation**, 04/01/96 to 03/30/99, amount: $198,289. (**Sarkar**)
54. Research Experience for Undergraduates, **National Science Foundation**, 07/01/96 to 06/30/98, amount: $10,000. (**Sarkar**)
55. Faculty Early CAREER Development Award, **National Science Foundation**, 07/01/95 to 06/30/98, amount: $144,933. (**Sarkar**)
56. RADIUS Phase II Seed Contract, **Martin Marietta Corporation**, 1/31/95 to 7/15/95, amount: $20,000. (**Sarkar**, Boyer).
57. Startup Equipment Grant, **College of Engineering, USF,** 08/30/93 to 08/29/94, amount: $14,000. (**Sarkar**).
58. Research and Creative Scholarship Grant Program, **College of Engineering**, USF, 01/94 to 12/94, amount: $7,390. (**Sarkar**).

13. Publications

>14,900 citations, h-index: 56 (Google Scholar Citation, as of 10/17/2026)
https://scholar.google.com/citations?user=xX2D9FQAAAAJ&hl=en

Refereed Journal Papers

1. A. Shahabaz, J. Toczydłowska, R. Gula, J. Theuerkauf, and S. Sarkar, "From relative to metric: Calibrating AI-based monocular depth learning models for distance sampling in wildlife monitoring applications," *Ecological Informatics*, vol. 96, 2026, 103846, ISSN 1574-9541, https://doi.org/10.1016/j.ecoinf.2026.103846.
2. G. Rotich and S. Sarkar, "Evaluating the Robustness of Foundation Models for Satellite Imagery," in *IEEE Access*, vol. 13, pp. 107720-107735, 2025, doi: 10.1109/ACCESS.2025.3581067.
3. A. Shahabaz and S. Sarkar, "Increasing Importance of Joint Analysis of Audio and Video in Computer Vision: A Survey," in *IEEE Access*, vol. 13, pp. 107720-107735, 2025, doi: 10.1109/ACCESS.2024.3391817.
4. C.Y. Pai, H. Morera, S. Sarkar, Y. Huang, K. S. Hall, L. J. Cowan, M. Peterson, and D. Goldgof, "Automated pressure ulcer dimension measurements using a depth camera," *Journal of Wound Care*, vol. 34, no. 3, pp. 205—214, 2025. doi: 10.12968/jowc.2021.0171.
5. H.S. Wisniewski, G. Wang, K. Mock, and S. Sarkar, "AI Education: Special Topic Issue of Technology & Innovation," *Technology and Innovation*, vol. 23, no. 1, pp. 1–3, 2024. doi: 10.21300/23.1.2023.1X.
6. N. Bustosa, M. Mashhadia, S. K. Lai-Yuena, S. Sarkar, T. K. Das, "A Systematic Literature Review on Object Detection Using Near Infrared and Thermal Images," *Neurocomputing*, vol. 560, December 2023. **(> 100 Google Scholar citations)** doi: 10.1016/j.neucom.2023.126804.

7. S. Aakur and S. Sarkar, "Leveraging Symbolic Knowledge Bases for Commonsense Natural Language Inference using Pattern Theory," *IEEE Transactions on Pattern Analysis and Machine Intelligence (PAMI)*, vol. 45, no. 11, Nov. 2023. doi: 10.1109/TPAMI.2023.3287837.

8. M. Noroozi, H. Rastegar Moghaddam, A. Shah, H. Charkhgard, S. Sarkar, T. Das, T. Pohland, "An AI-Assisted Systematic Literature Review of the Impact of Vehicle Automation on Energy Consumption," *IEEE Transactions on Intelligent Vehicles*, vol. 8, no. 6, June 2023. doi: 10.1109/TIV.2023.3268300.

9. R. Mounir, A. Shahabaz, R. Gula, J. Theuerkauf and S. Sarkar, "Towards Automated Ethogramming: Cognitively Inspired Event Segmentation for Streaming Wildlife Video Monitoring," International Journal of Computer Vision (IJCV), vol. 131, pp. 2267–2297, April 2023. doi: 10.1007/s11263-023-01781-2.

10. T. Tan, R. Alqasemi, R. Dubey, S. Sarkar, "Formulation and Validation of An Intuitive Quality Measure for Grasp Pose Evaluation in the Image Space," *IEEE Robotics and Automation Letters*, vol. 6, no. 4, pp. 6907-6914, October 2021, doi: 10.1109/LRA.2021.3096192.

11. M. P. Segundo, A. Pinto, R. Minetto, R. da Silva Torres, S. Sarkar, "Measuring economic activity from space: a case study using flying airplanes and COVID-19," *IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing*, vol. 14, pp. 7213-7224, 2021, doi: 10.1109/JSTARS.2021.3094053.

12. X. Guo, A. Srivastava, S. Sarkar, "A Quotient Space Formulation for Generative Statistical Analysis of Graphical Data," *Journal of Mathematical Imaging and Vision*, March 2021. https://doi.org/10.1007/s10851-021-01027-1.

13. R. Minetto, M. P. Segundo, G. Rotich, S. Sarkar, "Measuring Human and Economic Activity from Satellite Imagery to Support City-Scale Decision-Making during COVID-19 Pandemic," *IEEE Transactions on Big Data*, vol. 7, no. 1, pp. 56-68, March 2021, doi: 10.1109/TBDATA.2020.3032839.

14. I. B. Adames, S. Sarkar, S. Bhanja, "MatlabHTM: A Sequence Memory Model of Neocortical Layers for Anomaly Detection," SoftwareX, Volume 11, January–June 2020. doi: 10.1016/j.softx.2020.100491.

15. R. Minetto, M. P. Segundo, S. Sarkar, "Hydra: an Ensemble of Convolutional Neural Networks for Geospatial Land Classification," *IEEE Transactions on Geoscience and Remote Sensing*, vol. 57, no. 9, pp. 6530—6541, September, 2019. **(> 150 Google Scholar citations)** doi: 10.1109/TGRS.2019.2906883.

16. S. N Aakur, F. de Souza and S. Sarkar, "Generating open world descriptions of video using common sense knowledge in a pattern theory framework," *The Quarterly of Applied Mathematics*, vol. 77, pp. 323-356, 2019.

17. R. Subramanian and S. Sarkar, "Evaluation of Algorithms for Orientation Invariant Inertial Gait Matching," *IEEE Transactions on Information Forensics and Security*, vol. 14, no. 2, pp. 304—318, Feb. 2019. DOI: 10.1109/TIFS.2018.2850032

18. E. E Hansley, M. Pamplona Segundo, S. Sarkar, "Employing Fusion of Learned and Handcrafted Features for Unconstrained Ear Recognition," IET Biometrics, vol. 7, no. 3, pp. 215—223, April

2018, DOI: 10.1049/iet-bmt.2017.0210. (**IET Premier Award, 2020**) **(> 100 Google Scholar citations)**

19. F. de Souza, S. Sarkar, A. Srivastava, J. Su, "Spatially Coherent Interpretations of Videos Using Pattern Theory," *International Journal of Computer Vision*, vol. 121, no. 1, pp: 5—25, 2017. doi: 10.1007/s11263-016-0913-6.
20. F. de Souza; S. Sarkar; A. Srivastava; J. Su, "Pattern Theory for Representation and Inference of Semantic Structures in Videos," *Pattern Recognition Letters*, Special Issue on Award Winning Papers at International Conference on Pattern Recognition, vol. 72, no. 1, pp. 41—51, March 2016 (handled by EiC G. Sanniti di Baja). doi: 10.1016/j.patrec.2016.01.028.
21. S. Bhanja, D. Karunaratne, R. Panchumarthy, S. Rajaram, and S. Sarkar, "Non-Boolean computing with nanomagnets for computer vision applications," *Nature Nanotechnology*, vol. 11, pp. 177-183, 2016. doi: 10.1038/nnano.2015.245.
22. R. Krishnan and S. Sarkar, "Conditional distance based matching for one-shot gesture recognition," *Pattern Recognition*, vol. 48, no. 4, pp. 1302—1314, April 2015. doi: 10.1016/j.patcog.2014.10.026.
23. P.R. Sanberg, J. Genshaft, J., and S. Sarkar, Indirect costs: The reimbursement gap, *Nature*, vol. 517, p. 438, Jan 2015. doi: 10.1038/517438c.
24. M. Pamplona Segundoa, L. Silvaa, O. R. P. Bellon, and S. Sarkar, "Orthogonal projection images for 3D face detection," *Pattern Recognition Letters*, vol. 50, pp. 72-81, Dec. 2014 (handled by EiC G. Sanniti di Baja). doi: 10.1016/j.patrec.2013.09.027.
25. M. Shreve, T. Luguev, M. Pamplona, D. Goldgof, and S. Sarkar, "High-resolution 3D Surface Strain using 2D Camera and Low-resolution Depth Sensor," *Pattern Recognition Letters*, vol. 50, pp. 34-42, Dec. 2014 (handled by EiC G. Sanniti di Baja).
26. P. R. Sanberg, J. Genshaft, S. Sarkar, "Rewarding academic innovation," *Science*, vol. 346, no. 6212, pp. 928-929, Nov. 2014. doi: 10.1126/science.346.6212.928-c.
27. M. Shreve, J. Brizzi, S. Felilatyev, T. Luguev, D. Goldgof, and S. Sarkar, "Automatic Expression Spotting In Videos," *Image and Vision Computing*, vol. 32, no. 8, pp. 476—486, Aug 2014. doi: 10.1016/j.imavis.2014.04.010.
28. P. R. Sanberg, M. Gharib, P. T. Harker, E. W. Kaler, R. B. Marchase, T. D. Sands, N. Arshadi, and S. Sarkar, "Changing the academic culture: Valuing patents and commercialization toward tenure and career advancement," *Proceedings of the National Academy of Sciences* (PNAS), vol. 111, no. 18, pp. 6542—6547, April 2014. **(> 150 Google Scholar citations)** doi: 10.1073/pnas.1404094111.
29. S. Rajaram, D. K. Karunaratne, S. Sarkar, and S. Bhanja, "Study of Dipolar Neighbor Interaction on Magnetization States of Nano-Magnetic Disks," *IEEE Transactions on Magnetics*, vol. 49, no. 7, July 2013.
30. R. Panchumarthy, D.K Karunaratne, S. Sarkar, and S. Bhanja, "Magnetic State Estimator to Characterize the Magnetic States of Nano-Magnetic Disks," *IEEE Transactions on Magnetics*, vol. 49, no. 7, July 2013.
31. A. Brahmachari and S. Sarkar, "Hop-Diffusion Monte Carlo for Epipolar Geometry Estimation

between Very Wide-Baseline Images," *IEEE Transactions on Pattern Analysis and Machine Intelligence*, vol. 35, no. 3, pp. 755-762, March 2013. doi: 10.1109/TPAMI.2012.227.

32. K. Duncan and S. Sarkar, "Saliency in Images and Video: A Brief Survey," *IET Computer Vision*, vol. 6, no. 6, pp. 514—523, 2012. doi: 10.1049/iet-cvi.2012.0032.

33. S. Nayak, K. Duncan, B. Loeding, and S. Sarkar, "Finding Recurrent Patterns from Continuous Sign Language Sentences for Automated Extraction of Signs," *Journal of Machine Learning Research*, vol. 13, pp. 2589—2615, Sept. 2012.

34. S. Amarasiri, M. Gunaratne, and S. Sarkar, "Use of Digital Image Modeling for Evaluation of Concrete Pavement Macrotexture and Wear," *Journal of Transportation Engineering,* vol. 138, no. 5, pp. 589-602, May 2012.

35. A. Kumari, S. Sarkar, J. F. Pulecio, D. K. Karunaratne, and S. Bhanja, "Study of magnetization state transition in closely spaced nanomagnet two-dimensional array for computation," Journal of Applied Physics, vol. 109, no. 7, http://dx.doi.org/10.1063/1.3536795, 2011.

36. D. Randeniya, S. Sarkar, M. Gunaratne, "Vision IMU Integration using Slow Frame Rate Monocular Vision System in an Actual Roadway Setting," *IEEE Transactions on Intelligent Transportation Systems*, vol.11, no.2, pp.256-266, June 2010.

37. S. Amarasiri, M. Gunaratne, S. Sarkar, A. Nazef, "Optical Texture-based for Modeling Pavement Surface Wear and Cracks using Digital Images," *Transportation Research Record: Journal of the Transportation Research Board*, TRB of the National Academies, pp. 130-140, 2010.

38. S. Amarasiri, M. Gunaratne, S. Sarkar, "Modeling of Crack Depths in Digital Images of Concrete Pavements Using Optical Reflection Properties," *Journal of Transportation Engineering*, vol. 136, no. 6, pp. 489-499, June 2010.

39. R. Yang and S. Sarkar, "Handling Movement Epenthesis and Hand Segmentation Ambiguities in Continuous Sign Language Recognition using Nested Dynamic Programming," *IEEE Transactions on Pattern Analysis and Machine Intelligence*, vol. 32, no. 3, pp. 462—477, March 2010. **(> 150 Google Scholar citations)**

40. J. Candamo, R. Kasturi, D. Goldgof, S. Sarkar, "Detection of thin lines using low quality video from low altitude aircraft in urban settings," *IEEE Transactions on Aerospace and Electronic Systems*, vol. 45, no. 3, pp. 937—947, July 2009.

41. R. Yang and S. Sarkar, "Coupled Grouping and Matching for Sign and Gesture Recognition," *Computer Vision and Image Understanding*, vol.113, vo. 6, pp. 663—681, June 2009.

42. S. Nayak, S. Sarkar, B. Loeding, "Distribution-based dimensionality reduction applied to articulated motion recognition", *IEEE Transactions on Pattern Analysis and Machine Intelligence*, vol. 31, no. 5, pp. 795—810, May 2009.

43. S. Srivatsava, S. Sarkar, and S. Bhanja, "Estimation of Upper Bound of Power Dissipation in QCA Circuits," *IEEE Transactions on Nanotechnology*, vol. 8, no. 1, pp. 116—127, Jan 2009. **(> 200 Google Scholar citations)**

44. P. K. Mohanty, S. Sarkar, P. Jonathon Phillips, R. Kasturi, "Subspace Approximation of Face Recognition Algorithms: An Empirical Study," *IEEE Transactions on Information Forensics &*

Security, vol. 3, no. 4, pp. 734—748, Dec. 2008.

45. H. Vajaria, S. Sarkar, R. Kasturi, "Exploring Co-occurrence between Speech and Body Movement for Audio-guided Video Localization," *IEEE Transactions on Circuits and Systems for Video Technology (Special Issue on Event Analysis in Videos)*, vol. 18, no. 11, pp. 1608—1617, Nov. 2008.

46. S. K. Ghosh, J. W. Burdick, A. Bhattacharya, S. Sarkar, "On-line Algorithms for Exploring Unknown Polygonal Environments with Discrete Visibility," *IEEE Robotics and Automation Magazine, Special Issue on Computational Geometry in Path Planning*, vol.15, no.2, pp.67-76, June 2008.

47. S. Bhanja and S. Sarkar, "Thermal Switching Error versus Delay Tradeoffs in Clocked QCA Circuits," *IEEE Transactions on VLSI Systems*, vol. 16, no. 5, pp. 528—541, May 2008.

48. D. Randeniya, M. Gunaratne, S. Sarkar, and A. Nazef, "Calibration of Inertial and Vision Systems as a Prelude to Multi-Sensor Fusion," *Transportation Research Part C (Emerging Technologies)*, vol. 16, no. 2, pp. 255—274, Apr 2008.

49. P. Mohanty, S. Sarkar, R. Kasturi, "From Scores to Face Template: A Model-based Approach," *IEEE Transactions on Pattern Analysis and Machine Intelligence*, vol. 29, no. 12, Dec. 2007.

50. H. Vajaria, T. Islam, P. Mohanty, S. Sarkar, R. Sankar, R. Kasturi, "Evaluation and analysis of a face and voice outdoor multi-biometric system," *Pattern Recognition Letters*, vol. 28, no. 12, pp. 1572– 1580, Sept. 2007.

51. Z. Liu and S. Sarkar, "Outdoor recognition at a distance by fusing gait and face," *Image and Vision Computing*, vol. 25, no. 6, pp. 817—832, June 2007. **(> 100 Google Scholar citations)** doi: 10.1016/j.imavis.2006.05.022.

52. Y. Zhang, D. B. Goldgof, S. Sarkar and L. V. Tsap, "A Sensitivity Analysis Method and Its Application in Physics-Based Nonrigid Motion Modeling," *Image and Vision Computing*, vol. 25, no. 3, pp. 262– 273, March 2007. doi: 10.1016/j.imavis.2005.08.007.

53. Z. Liu and S. Sarkar, "Improved Gait Recognition by Gait Dynamics Normalization," *IEEE Transactions on Pattern Analysis and Machine Intelligence*, vol. 28, no. 6, pp. 863–876, June 2006. **(>450 Google Scholar citations)**

54. Y. Zhang, L. O. Hall, D. B. Goldgof, and S. Sarkar, "A Constrained Genetic Approach for Computing Material Property of Elastic Objects," *IEEE Transactions on Evolutionary Computation*, vol. 10, no. 3, pp. 341–357, June 2006.

55. S. Bhanja and S. Sarkar, "Probabilistic Modeling of QCA Circuits Using Bayesian Networks," *IEEE Transactions on Nanotechnology*, vol 5, no 6, pp. 657–670, Nov. 2006.

56. Z. Liu and S. Sarkar, "Effect of Silhouette Quality on Hard Problems in Gait Recognition," *IEEE Transactions on Systems, Man, and Cybernetics-PartB*, vol. 35, no. 2, pp. 170–183, Apr. 2005. **(> 150 Google Scholar citations)**

57. S. Sarkar, P. Jonathon Phillips, Z. Liu, I. Robledo, P. Grother, K. Bowyer, "The HumanID Gait Challenge Problem: Data Sets, Performance, and Analysis," *IEEE Transactions on Pattern Analysis and Machine Intelligence*, vol. 27, no. 2, pp. 162–177, Feb. 2005. **(>1600 Google Scholar citations)**

58. Y. Zhang, D. Goldgof, S. Sarkar, and L. Tsap, "A Modeling Approach for Burn Scar Assessment Using Natural Feature and Elastic Property," *IEEE Transactions on Medical Imaging*, vol 23, no. 10, pp. 1325–1329, Oct. 2004

59. M. Powell, S. Sarkar, D. B. Goldgof, and K. Ivanov, "A Methodology for Extracting Objective Color From Images," *IEEE Transactions on Systems, Man, and Cybernetics-Part B*, vol. 34, no. 5, pp. 1964– 1978, Oct. 2004.

60. A. Gosavi, T. K. Das, and S. Sarkar, "A simulation-based learning automata framework for solving semi-Markov decision problems under long-run average reward," *IIE Transactions on Quality and Reliability Engineering*, vol. 36, no. 6, pp. 557–567, June 2004.

61. I. Robledo and S. Sarkar, "Statistical motion model based on the change of feature relationships: human gait-based recognition," *IEEE Transactions on Pattern Analysis and Machine Intelligence*, vol. 25, no. 10, pp. 1323–1328, Oct 2003.

62. K. Chang, K. W. Bowyer, S. Sarkar, and B. Victor, "Comparison and Combination of Ear and Face Images In Appearance-Based Biometrics," *IEEE Transactions on Pattern Analysis and Machine Intelligence*, vol. 25, no. 9, pp. 1160–1165, Sept. 2003. **(> 850 Google Scholar citations)**

63. P. Soundararajan and S. Sarkar, "An In-Depth Study of Graph Partitioning Measures for Perceptual Organization," *IEEE Transactions on Pattern Analysis and Machine Intelligence*, vol. 25, no. 6, pp. 642– 660, June 2003.

64. S. Sarkar, D. Majchrzak, and K. Korimilli, "Perceptual Organization based Computational Model for Robust Segmentation of Moving Objects," *Computer Vision and Image Understanding*, vol. 86, no. 3, pp. 141–170, June 2002.

65. L. Tsap, D. B. Goldgof, and S. Sarkar, "Fusion of physically-based registration and deformation modeling for nonrigid motion analysis," in *IEEE Transactions on Image Processing*, vol. 10, no. 11, pp. 1659–1669, June 2001.

66. M. W. Powell, S. Sarkar, and D. B. Goldgof, "A simple strategy for calibrating the geometry of light sources," in *IEEE Transactions on Pattern Analysis and Machine Intelligence*, vol. 23, no. 9, pp. 1022– 1027, Sept. 2001. **(> 100 Google Scholar citations)**

67. S. Chavali and S. Sarkar, "Modeling Parameter Space Behavior of Vision Systems using Bayesian Networks," in *Computer Vision and Image Understanding*, vol. 79, no. 2, pp. 185–223, Aug 2000.

68. L. V. Tsap, D. B. Goldgof and S. Sarkar, "Nonrigid Motion Analysis Based on Dynamic Refinement of Finite Element Models," in *IEEE Transactions on Pattern Analysis and Machine Intelligence*, vol. 22, no. 5, pp. 526–543, May 2000.

69. S. Sarkar and P. Soundararajan, "Supervised Learning of Large Perceptual Organization: Graph Spectral Partitioning and Learning Automata," in *IEEE Transactions on Pattern Analysis and Machine Intelligence*, vol. 22, no. 5, pp. 504–525, May 2000. **(> 250 Google Scholar citations)**

70. L. V. Tsap, D. B. Goldgof, S. Sarkar, and P. S. Powers, "A method for increasing precision and reliability of elasticity analysis in complicated burn scar cases," in *International Journal of Pattern Recognition and Artificial Intelligence*, vol. 14, no. 2, pp. 189–210, March 2000.

71. K. L. Boyer and S. Sarkar, "Perceptual Organization in Computer Vision: Status, Challenges, and Potential," Editorial in *Computer Vision and Image Understanding*, vol. 76, no. 1, pp. 1–5, Oct.

1999.

72. T. K. Das and S. Sarkar, "Optimal Preventive Maintenance in a Production Inventory System,"in *IIE Transactions on Quality and Reliability Engineering*, vol. 31, no. 6, pp. 537–551, June 1999. **(> 100 Google Scholar citations)**

73. L. V. Tsap, D. B. Goldgof, and S. Sarkar, "Model-based force-driven nonrigid motion recovery from sequences of range images without point correspondences," in *Image and Vision Computing*, vol. 17, no. 14, pp. 997–1008, 1999. doi: 10.1016/S0262-8856(98)00185-1.

74. P. Powers, S. Sarkar, D. B. Goldgof, C. W. Cruse, and L. V. Tsap, "Scar Assessment: Current problems and future solutions," in *Journal of Burn Care and Rehabilitation*, vol. 20, no. 1, part 1, pp. 54–60, Jan/Feb. 1999. **(> 150 Google Scholar citations)**

75. L. V. Tsap, D. B. Goldgof, S. Sarkar, and P. Powers, "A vision-based technique for objective assessment of burn scars," in *IEEE Transactions on Medical Imaging*, pp. 620–633, vol. 17, no. 4, Aug 1998.

76. T. Sanocki, K. W. Bowyer, M. Heath, and S. Sarkar, "Are Edges Sufficient for Object Recognition," in *Journal of Experimental Psychology: Human Perception and Performance*, vol. 24, no. 1, pp. 340–349, 1998.

77. S. Sarkar and K. L. Boyer, "Quantitative Measures of Change based on Feature Organization: Eigenvalues and Eigenvectors" in *Computer Vision and Image Understanding*, vol. 71, no. 1, pp. 110-136, July 1998. **(> 300 Google Scholar citations)**

78. L. V. Tsap, D. B. Goldgof, and S. Sarkar, "Efficient Nonlinear Finite Element Modeling of Nonrigid Objects via Optimization of Mesh Models," in Special Issue of *Computer Vision and Image Understanding* on CAD-Based Computer Vision, vol. 69, no. 3, pp. 330–350, March 1998.

79. M. Heath, S. Sarkar, T. Sanocki, and K. W. Bowyer, "Comparison of Edge Detectors: Initial Study and Methodology" in *Computer Vision and Image Understanding*, vol. 69, no. 1, pp. 38–54, Jan. 1998. **(> 600 Google Scholar citations)**

80. S. Sarkar and D. B. Goldgof, "Integrating Image Computation in Undergraduate Level Data Structures Education," Special Issue on Education in *International Journal on Pattern Recognition and Artificial Intelligence*, vol. 12, no. 8, pp. 1071–1080, 1998. doi: 10.1142/S0218001498000609.

81. M. Heath, S. Sarkar, T. Sanocki, and K. W. Bowyer, "A Robust Visual Method for Assessing the Relative Performance of Edge Detection Algorithms" in *IEEE Transactions on Pattern Analysis and Machine Intelligence*, vol. 19, no. 12, pp. 1338–1359, Dec. 1997. **(>700 Google Scholar citations)**

82. S. Borra and S. Sarkar, "A Framework for Performance Characterization of Intermediate Level Grouping Modules," in *IEEE Transactions on Pattern Analysis and Machine Intelligence*, vol. 19, no. 11, pp. 1306–1312, Nov. 1997.

83. S. Sarkar and K. L. Boyer, "Using Perceptual Inference Networks to Manage Vision Processes," in *Computer Vision, Graphics, and Image Processing: Image Understanding*, vol. 62, no. 1, pp. 27–46, July 1995.

84. S. Sarkar and K. L. Boyer, "A Computational Structure for Pre-attentive Perceptual Organization: Graphical Enumeration and Voting Methods," in *IEEE Transactions on Systems, Man, and*

Cybernetics, vol. 24, no. 2, pp. 246–267, Feb. 1994.

85. K. L. Boyer and S. Sarkar, "Comments on "On the Localization Performance Measure and Optimal Detection," in *IEEE* Transactions on Pattern Analysis and Machine Intelli*gence*, vol. 16, no. 1, pp. 106–107, Jan. 1994.

86. S. Sarkar and K. L. Boyer, "Perceptual Organization in Computer Vision: A Review and a proposal for a Classificatory Structure," in *IEEE Transactions on Systems, Man, and Cybernetics*, vol. 23, no. 2, pp. 382–399, Mar. 1993. **(> 300 Google Scholar citations)**

87. S. Sarkar and K. L. Boyer, "Integration, Inference, and Management of Spatial Information Using Bayesian Networks: Perceptual Organization," in *IEEE Transactions on Pattern Analysis and Machine Intelligence* (Special Section on Probabilistic Reasoning), vol. 15, no. 3, pp. 256–274, Mar. 1993. **(> 200 Google Scholar citations)**

88. S. V. Raman, S. Sarkar, and K. L. Boyer, "Hypothesizing Structures in Edge Focused Cerebral Magnetic Resonance Images Using Graph Theoretic Cycle Enumeration," in *Computer Vision, Graphics, and Image Processing: Image Understanding*, vol. 57, no. 1, pp. 81–98, Jan. 1993.

89. S. Sarkar and K. L. Boyer, "On optimal infinite impulse response edge detection filters," in *IEEE Transactions on Pattern Analysis and Machine Intelligence*, vol. 13, no. 2, pp. 1154–1171, Nov. 1991. **(> 200 Google Scholar citations)**

90. S. Sarkar and K. L. Boyer, "Optimal infinite impulse response zero crossing based edge detectors," in *Computer Vision, Graphics, and Image Processing: Image Understanding*, vol. 54, no. 2, pp. 224–243, Sept. 1991. **(> 100 Google Scholar citations)**

91. S. V. Raman, S. Sarkar, and K. L. Boyer, "Tissue boundary refinement in magnetic resonance images using contour-based scale space matching," in *IEEE Transactions on Medical Imaging*, vol. 10, pp. 109–121, June 1991.

92. K. L. Boyer, D. M. Wuescher, and S. Sarkar, "Dynamic edge warping: An experimental system for recovering disparity maps in weakly constrained systems," in *IEEE Transactions on Systems, Man, and Cybernetics*, vol. 21, pp. 143–158, Jan. 1991.

Full Paper Refereed Conference Papers

93. C. Ayala, S. Sarkar, L. P. Griffin, M. M. Lamont, S. Snow, "TurtleVision: A Deployed Multiscale Ensemble for Sea Turtle Track Detection in Operational Aerial Surveys," *Winter Conference on Applications of Computer Vision (WACV)*, Jan. 2027.

94. L. Miller and S. Sarkar, "EDGE-STREAMER: Lightweight On-Device Event-Hierarchy Segmentation in Streaming Video," *Indian Conference on Computer Vision, Graphics & Image Processing (ICVGIP)*, Dec. 2026.

95. J. Anderson, X. Ou, S. Sarkar, and J. Wang, "Pathway to Computing: an Innovative Approach to Inviting Non-Computing Students into Graduate Computer Science Programs," *Frontiers in Education (FIE)*, Nov. 2025.

96. Ibragimov, A., Pamplona-Segundo, M., Sarkar, S., Bowyer, K.W., "Unveiling Gender Effects in Gait Recognition Using Conditional-Matched Bootstrap Analysis," *IEEE Conference on Face and*

Gesture (FG), 2024.

97. Mounir, R., and Sarkar, S., "Predictive Attractor Models," *Neural Information Processing* (NeurIPS), 2024.

98. S. Liang, A. Srivastava, M. Pamplona-Sengundo, S. Sarkar, and S. Aakur, "Shape-Graph Matching Network (SGM-net): Registration for Statistical Shape Analysis," *IEEE International Symposium on Biomedical Imaging*, 2024.

99. Kshitiz, S. Shreshtha, B. Dutta, M. Dosi, M. Vatsa, R. Singh, S. Anand, S. Sarkar, S. Mali, "BirdCollect: A Comprehensive Benchmark for Analyzing Dense Bird Flock Attributes," *38th AAAI Conference on Artificial Intelligence* (AAAI), AI for Social Impact, 2024.

100. R. Mounir, S. T. Vijayaraghavan, and S. Sarkar, "STREAMER: Streaming Representation Learning and Event Segmentation in a Hierarchical Manner," *Neural Information Processing* (NeurIPS), 2023.

101. D. Du, C. Hill, G. Bertocco, M. Pamplona Segundo, W. Robbins, B. Richardwebster, R. Collins, S. Sarkar, T. Boult, and S. McCloskey, "DOERS: Distant Observation Enhancement and Recognition System," *IEEE International Joint Conference on Biometrics* (IJCB), 2023.

102. Kshitiz, S. Shreshtha, R. Mounir, M. Vatsa, R. Sing, S. Anand, S. Sarkar, and S. M. Parihar, "Long-term Monitoring of Bird Flocks in the Wild," *International Joint Conference on Artificial Intelligence* (IJCAI) AI for Social Good Track, August 2023.

103. A. Basu Bal, A. Srivastava, M. Pamplona-Segudo, R. Mounir, S. Sarkar, "Bayesian Tracking of Video Graphs Using Joint Kalman Smoothing and Registration," *European Conference on Computer Vision (ECCV)*, oral paper, October 2022.

104. S. Aakur and S. Sarkar, "Actor-centered Representations for Action Localization in Streaming Videos," *European Conference on Computer Vision (ECCV)*, October 2022.

105. R. Mounir, R. Gula, J. Theuerkauf, and S. Sarkar, "Spatio-Temporal Event Segmentation for Wildlife Extended Videos," 6th IAPR International Conference on Computer Vision and Image Processing, Dec. 2021.

106. T. Tan, R. Alqasemi, R. Dubey, S. Sarkar, "A Practical and Intuitive Quality Measure for Evaluating Antipodal Grasp Poses in The Image Space," *IEEE/RSJ International Conference on Intelligent Robots and Systems* (IROS), Sept. 2021.

107. J. Wang, Z. Beasley, K. Christensen, S. Sarkar, "Increasing Participation in Computer Science and Engineering: A Systematic Approach for Culture Change," *Annual Conference of the American Society for Engineering Education* (ASEE), July 2021.

108. S. Aakur and S. Sarkar, "Action Localization through Continual Predictive Learning," *European Conference on Computer Vision* (ECCV), Aug 2020.

109. Z. Emersic, H. Park, G.P. Nam, I.J. Kim, S. G. Sangodkar, U. Kacar, M. Kirci, L. Yuan, J. Yuan, H. Zhao, F. Lu, S. V. Aruna Kumar, J. Mao, X. Zhang, D. Yaman, F.I. Eyiokur, K. B. Añzler, H. E. Ekenel, D. Paul Chowdhury, S. Bakshi, P. K. Sa, B. Majhi, B. S. Harish, P. Peer, V. Struc, W. Gutfeter, J. Nourmohammadi-Khiarak, A. Pacut, E. E. Hansley, M.P. Segundo, **S. Sarkar**, "The Unconstrained Ear Recognition Challenge," *IAPR International Conference on Biometrics (ICB*), 2019.

110. S. Aakur and S. Sarkar, "A Perceptual Prediction Framework for Self-Supervised Event Segmentation," *IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*, 2019. **(> 100 Google Scholar citations)**

111. S. Aakur, F. de Souza, S. Sarkar, "Going Deeper with Semantics: Video Activity Interpretation using Semantic Contextualization," *IEEE Winter Conference on Applications of Computer Vision (WACV)*, 2019.

112. F. A. Faria and S. Sarkar, "A Graph-based Approach for Static Ensemble Selection in Remote Sensing Image," *International Conference on Pattern Recognition (ICPR)*, 2018

113. S. Aakur, F. Dias Moreira de Souza, and S. Sarkar, "Towards a Knowledge-based approach for Generating Video Descriptions," *Computer and Robot Vision (CRV),* May 2017.

114. M. Fathollahi, R. Kasturi, and S. Sarkar, "3D Human Pose Estimation in Monocular Images," *International Conference on 3D Vision*, 2016.

115. F. Dias Moreira de Souza, G. Camara Chavez, and S. Sarkar, "Building Semantic Understanding beyond Deep Learning from Sound and Vision," *International Conference on Pattern Recognition* (ICPR), 2016.

116. F. de Souza, S. Sarkar, A. Srivastava, and J. Su, "Temporally Coherent Interpretations for Long Videos Using Pattern Theory," *IEEE Conference on Computer Vision and Pattern Recognition* (CVPR), 2015.

117. R. Subramanian, S. Sarkar, M. Labrador, K. Contino, C. Eggert, O. Javed, J. Zhu, and H. Cheng, "Orientation Invariant Gait Matching Algorithm based on the Kabsch Alignment," *IEEE International Conference on Identity, Security, and Behavior Analysis*, 2015. (**Best Student Paper Award**)

118. M. Mashali, R. Alqasemi, S. Sarkar, and R. Dubey, "Design, Implementation and Evaluation of a Motion Control Scheme for Mobile Platforms with High Uncertainties," *IEEE RAS/EMBS International Conference on Biomedical Robotics and Biomechatronics*, pp. 1091—1097, August 2014 (oral).

119. F. de Souza, S. Sarkar, A. Srivastava, and J. Su, "Pattern Theory-based Interpretation of Activities," *International Conference on Pattern Recognition* (ICPR), pp. 106—111, August 2014 (oral). (**Best Scientific Paper Award**)

120. J. Brizzi, M. Shreve, D. Goldgof, and S. Sarkar, "Optical Flow Based Expression Suppression in Video," *International Conference on Pattern Recognition* (ICPR), pp. 1817—1821, August 2014.

121. K. Khokar, R. Alqasemi, S. Sarkar, K. B. Reed, and R. Dubey, "A Novel Telerobotic Method for Human-in-the-Loop Assisted Grasping based on Intention Recognition," *IEEE International Conference on Robotics and Automation* (ICRA), pp. 4762—4769, June 2014 (oral).

122. J. Su, A. Srivastava, F. de Souza, and S. Sarkar, "Rate-Invariant Analysis of Trajectories on Riemannian Manifolds with Application in Visual Speech Recognition," *IEEE Conference on Computer Vision and Pattern Recognition* (CVPR), Columbus, Ohio, pp. 620—627, June 2014 (oral).

123. J. Su, A. Srivastava, F. Souza, and S. Sarkar, "Rate-Invariant Comparisons of Covariance Paths for Visual Speech Recognition," *National Conference on Computer Vision, Pattern Recognition,*

Image Processing and Graphics, Jodhpur, India, pp, 1—4, Dec. 2013.

124. F. A. Faria, J. A. dos Santos, S. Sarkar, A. Rocha, and R. Torres, "Classifier Selection based on the Correlation of Measures: When Fewer is More," *Conference on Graphics, Patterns, and Images (SIBGRAPI)*, Brazil, Sept. 2013.

125. K. Duncan, S. Sarkar, R. Alqasemi, and R. Dubey, "Multi-scale Superquadric Fitting for Efficient Shape and Pose Recovery of Unknown Objects," *IEEE Conference on Robotics and Automation* (ICRA), May, 2013.

126. K. H. Khokar, R. Alqasemi, S. Sarkar, R. V. Dubey, "Human motion intention based scaled teleoperation for orientation assistance in preshaping for grasping," *IEEE International Conference on Rehabilitation Robotics (ICRA)*, May 2013.

127. R. Panchumarthy, R. Subramanian and S. Sarkar, "Biometric Evaluation on the Cloud: A Case Study with HumanID Gait Challenge," *IEEE/ACM International Conference on Utility and Cloud Computing*, 2012.

128. K. Duncan and S. Sarkar, "Relational Entropy-based Saliency Detection in Images and Videos," *IEEE International Conference on Image Processing*, 2012.

129. A. S. Brahmachari and S. Sarkar, "Fast Detection of Noisy GPS and Magnetometer Tags in Wide-Baseline Multi-Views," *ACM Multimedia Conference*, 2011.

130. M. Shreve, N. Jain, D. B. Goldgof, S. Sarkar, W. G. Kropatsch, C. J. Tzou, M. Frey, "Evaluation of Facial Reconstructive Surgery on Patients with Facial Palsy Using Optical Strain," *International Conference on Computer Analysis of Images and Patterns*, vol. 1, pp. 512—519, 2011.

131. M. Shreve, S. Godavarthy, D. B. Goldgof, S. Sarkar, "Macro- and micro-expression spotting in long videos using spatio-temporal strain," *IEEE Conference on Face and Gesture Recognition*, pp. 51-56, 2011. **(> 300 Google Scholar citations)**

132. A. S. Brahmachari and S. Sarkar, "View Clustering of Wide-Baseline N-Views for Photo Tourism," *Proceedings of Conference on Graphics, Patterns and Images (SIBGRAPI)*, 2011.

133. R. Panchumarthy, D. Karunaratne, S. Sarkar, S. Bhanja, "Tool for analysis and quantification of fabrication layouts in nanomagnet-based computing," *IEEE Conference on Nanotechnology (IEEE-NANO)*, pp. 111-115, Aug. 2011.

134. J. Pulecio, S. Bhanja, S. Sarkar, "An experimental demonstration of the viability of energy minimizing computing using nano-magnets," *IEEE Conference on Nanotechnology (IEEE-NANO)*, pp. 1038-1042, Aug 2011.

135. S. Srivastava, A. Asthana, S. Bhanja, S. Sarkar, "QCAPro - An Error-Power Estimation Tool for QCA Circuit Design," *IEEE International Symposium on Circuits and Systems*, May 2011. **(> 350 Google Scholar citations**)

136. M. Shreve, V. Manohar, D. Goldgof, and S. Sarkar, "Face Recognition under Camouflage and Adverse Illumination," *IEEE Conference on Biometrics Theory, Applications and Systems*, Sept. 2010 (oral).

137. R. Krishnan and S. Sarkar, "Detecting Group Turn Patterns in Conversations using Audio-Video Change Scale-Space," *International Conference on Pattern Recognition*, 2010 (oral).

138. V. Manohar, M. Shreve, D. Goldgof, and S. Sarkar, "Modeling Facial Skin Motion Properties in Video and its Application to Matching Faces across Expressions," *International Conference on Pattern Recognition*, 2010, (oral).

139. A. S. Brahmachari, S. Sarkar, "BLOGS: Balanced Local and Global Search for Non-degenerate Two View Epipolar Geometry," *IEEE International Conference on Computer Vision (ICCV)*, Oct 2009.

140. S. Nayak, S. Sarkar, and B. Loeding, "Automated Extraction of Signs from Continuous Sign Language Sentences using Iterated Conditional Modes," *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, pp. 2583-2590, June 2009.

141. S. Amarasiri, M. Gunaratne, S. Sarkar, A. Nazef, "Modeling of Cracks and Joints in Digital Images of Concrete Pavements Using Optical Reflection Properties," *88th Annual Meeting of Transportation Research Board*, 2009.

142. H. Vajaria, S. Sarkar, and R. Kasturi, "Clip Retrieval Using Multi-Modal Biometrics in Meeting Archives," *International Conference on Pattern Recognition*, Dec. 2008 (oral).

143. V. Manohar, M. Shreve, D. Goldgof, and S. Sarkar, "Finite Element Modeling of Facial Deformation in Videos for Computing Strain Pattern," *International Conference on Pattern Recognition*, Dec. 2008.

144. Z. Liu and S. Sarkar, "Robust Outdoor Text Detection Using Text Intensity and Shape Features," *International Conference on Pattern Recognition*, Dec. 2008.

145. S. Sarkar and P. Mohanty, "Globally Linear Embedding of Biometric Scores: An Empirical Study, *IEEE Conference on Biometrics: Theory, Applications, and Systems*, May 2008.

146. S. Amarasiri, M. Gunaratne, S. Sarkar, and A. Nazef, "Characterization of Texture Properties of Pavement Images as Aid to Automated Comprehensive Pavement Evaluation," *Annual Meeting of Transportation Research Board of the National Academies*, Jan. 2008.

147. R. Yang, S. Sarkar, and B. Loeding, "Enhanced Level Building Algorithm for the Movement Epenthesis Problem in Sign Language Recognition," *IEEE Conference on Computer Vision and Pattern Recognition*, pp. 1–8, June 2007 (oral).

148. R. Yang and S. Sarkar, "Gesture Recognition using Hidden Markov Models from Fragmented Observations," *IEEE Conference on Computer Vision and Pattern Recognition* pp. 766-773, June 2006.

149. H. Vajaria, T. Islam, S. Sarkar, R. Sankar, R. Kasturi, "Audio Segmentation and Speaker Localization in Meeting Videos," *International Conference on Pattern Recognition*, vol.2, pp. 1150–1153, Aug. 2006 (oral). (**IBM Best Student Paper Award**)

150. Ruiduo Yang and S. Sarkar, "Detecting Coarticulation in Sign Language using Conditional Random Fields," *International Conference on Pattern Recognition* vol. 2, no.pp. 108-112, 20-24, Aug. 2006 (oral).

151. S. Ravulapalli and S. Sarkar, "Association of Sound to Motion in Video using Perceptual Organization," *International Conference on Pattern Recognition,* vol.1, no.pp.1216-1219, 2006.

152. P. Mohanty, S. Sarkar, R. Kasturi, "A Non-Iterative Approach to Reconstruct Face Templates

from Match Scores," *International Conference on Pattern Recognition*, vol.4, no.pp. 598-601, Aug. 2006 (oral).

153. R. Yang, S. Sarkar, B. L. Loeding, A. I. Karshmer, "Efficient Generation of Large Amounts of Training Data for Sign Language Recognition: A Semi-automatic Tool," *International Conference on Computers Helping People with Special Needs*, pp. 635–642, 2006, (oral).

154. S. Bhanja and S. Sarkar, "Switching Error Modes of QCA Circuits,"*IEEE Conference on Nanotechnology*, vol. 1, pp. 383-386, 17-20 June 2006.

155. S. Srivastava, S. Sarkar, and S. Bhanja, "Power Dissipation Bounds and Models for Quantum-dot Cellular Automata Circuits," *IEEE Conference on Nanotechnology*, vol.1, no.pp. 375-378, 17-20 June 2006.

156. S. Bhanja and S. Sarkar, "Graphical probabilistic inference for ground state and near-ground state computing in QCA circuits," *IEEE Conference on Nanotechnology*, vol. 1, pp 290-293, 2005.

157. S. Sarkar and S. Bhanja, "Synthesizing energy minimizing quantum-dot cellular automata circuits for vision computing," *IEEE Conference on Nanotechnology*, vol. 2, pp. 541-544, 2005.

158. Z. Liu and S. Sarkar, "Simplest Representation Yet for Gait Recognition: Averaged Silhouette," *International Conference on Pattern Recognition*, Aug. 2004. **(> 300 Google Scholar citations)**

159. D. Majchrzak and S. Sarkar, "Parallelizing Motion Segmentation by Perceptual Organization of XYT," *International Conference on Pattern Recognition*, Aug. 2004.

160. Y. Zhang, D. Goldgof, and S. Sarkar, "Elastic Face, An Anatomy-based Biometrics Beyond Visible Cue," *International Conference on Pattern Recognition*, Aug. 2004.

161. B. L. Loeding, S. Sarkar, A. Parashar, and A. Karshmer, "Progress in Automated Computer Recognition of Sign Language," *International Conference on Computers Helping People with Special Needs*, July 2004.

162. Z. Liu, L. Malave and S. Sarkar, "Studies on Silhouette Quality and Gait Recognition," *IEEE Conference on Computer Vision and Pattern Recognition*, vol. 2, pp. 704–711, June 2004.

163. Y. Qiu, D. Goldgof, L. Lihua, S. Sarkar, Y. Zhang, and S. Anton "Correspondence Recovering in 2-view mammography," *IEEE International Symposium on Biomedical Imaging*, pp. 197–200, April 2004.

164. I. Robledo and S. Sarkar, "Experiments on Gait Analysis by Exploiting Nonstationarity in the Distribution of Feature Relationships," *International Conference on Pattern Recognition*, vol. 1, pp. 1–4, Aug. 2002, (oral).

165. P. J. Phillips, S. Sarkar, I. Robledo, P. Grother, and K. Bowyer, "The Gait Identification Challenge Problem: Data Sets and Baseline Algorithm," *International Conference on Pattern Recognition*, vol. 1, pp. 385–388, Aug 2002. **(> 300 Google Scholar citations)**

166. A. Robles-Kelly, S. Sarkar, and E. R. Hancock, "A Fast Leading Eigenvector Approximation for Segmentation and Grouping," *International Conference on Pattern Recognition*, vol. 2, pp. 639–642, Aug 2002.

167. B. Victor, K. Bowyer, and S. Sarkar, "An Evaluation of face and ear Biometrics," *International Conference on Pattern Recognition*, vol. 1, pp. 429–432, Aug 2002. **(> 250 Google Scholar**

citations)

168. Y. Zhang, D. B. Goldgof, S. Sarkar, and M. Shin, "Recovering Elastic Property of Soft Tissues Using 2D Image Sequences With Limited Range Data," *International Conference on Pattern Recognition*, vol. 1, pp. 755–758, Aug 2002.

169. Y. Zhang, D. B. Goldgof, S. Sarkar, and L. V. Tsap, "Tracking Objects Using Recovered Physical Motion Parameters," *International Conference on Pattern Recognition*, vol. 2, pp. 10–13, Aug 2002.

170. P. J. Phillips, S. Sarkar, I. Robledo, P. Grother, and K. W. Bowyer, "Baseline Results for the Challenge Problem of Human ID Using Gait Analysis," *International Conference on Automatic Face and Gesture Recognition*, pp. 137–142, May 2002. **(> 150 Google Scholar citations)**

171. Y. Zhang, L. O. Hall, D. B. Goldgof and S. Sarkar, "A Constrained Genetic Approach for Reconstructing Young's Modulus of Elastic Objects from Boundary Displacement Measurements," *World Congress on Evolutionary Computation (WCCI)*, pp. 1003-1008, May 2002.

172. I. Robledo and S. Sarkar, "Discrimination of Motion Based on Traces in the Space of Probability Functions over Feature Relations," *IEEE Conference on Computer Vision and Pattern Recognition*, pp. 976–983, Dec. 2001.

173. P. Soundararajan and S. Sarkar, "Investigation of Measures for Grouping by Graph Partitioning," in *IEEE Conference on Computer Vision and Pattern Recognition*, pp. 239–246, Dec. 2001, (oral).

174. A. Bhattacharya, S. Ghosh, and S. Sarkar, "Exploring an Unknown polygonal environment with bounded visibility," in *International Conference on Computational Science*, published as Lecture Notes in Computer Science, Springer Verlag, vol. 2073, pp. 640–648, May 2001.

175. Y. Zhang, D. Goldgof, S. Sarkar, L. Tsap, "Model-Based Nonrigid Motion Analysis Using Natural Feature-Adaptive Mesh," in *International Conference on Pattern Recognition*, v3, pp. 839-843, Barcelona, Spain, September 2000.

176. K. Korimilli and S. Sarkar, "Motion Segmentation based on Perceptual Organization of Spatio-Temporal Volumes," in *International Conference on Pattern Recognition*, pp. 844—848, Barcelona, Sept 2000.

177. D. Majchrzak, S. Sarkar, B. Sheppard and, R. Murphy, "Motion Detection From Temporally Integrated Images," in *International Conference on Pattern Recognition*, Barcelona, pp. 836—839, Sept 2000.

178. L. V. Tsap, D. Goldgof, and S. Sarkar, "Multiscale Combination of Physically based Registration and Deformation Modeling," in *IEEE International Conference on Computer Vision and Pattern Recognition*, June 2000.

179. M. Powell, S. Sarkar, and D. Goldgof, "Calibration of Light Sources," in *IEEE International Conference on Computer Vision and Pattern Recognition*, June 2000.

180. S. Sainath and S. Sarkar, "An approximate algorithm for structural matching of images", in *International Conference on Image Processing*, pp. 798–802, vol. 1, Oct 1998

181. L. Tsap, G. Goldgof, and S. Sarkar, "A model based point correspondence and nonrigid motion recovery from sequences of range images," in *International Conference on Image Processing*, pp. 218-222, vol. 2, Oct 1998.

182. J. Wang, K. W. Bowyer, T. Sanocki, S. Sarkar, "The Effect of Edge Strength on Object Recognition from Edge Images," in *International Conference on Image Processing*, vol. 3, pp. 45–49, Oct 1998 (oral).

183. S. Sarkar, "Learning to Form Large Groups of Salient Image Features," in *IEEE Conference on Computer Vision and Pattern Recognition*, pp. 780–786, June 1998.

184. L. V. Tsap, D. B. Goldgof, and S. Sarkar, "Nonrigid Motion Analysis Based on Dynamic Refinement of Finite Element Models," in *IEEE Conference on Computer Vision and Pattern Recognition*, pp. 728–734, June 1998.

185. S. Borra and S. Sarkar, "Experimental Performance Evaluation of Feature Grouping Modules," in *IEEE Conference on Computer Vision and Pattern Recognition*, pp. 891–896, June 1997.

186. N. Saxena, S. Sarkar, and N. Ranganathan, "Mapping and Parallel Implementation of Bayesian Belief Networks," in *IEEE Symposium on Parallel and Distributed Processing*, Oct. 1996.

187. S. Sarkar and Kim L. Boyer, "Quantitative Measures of Change based on Feature Organization: Eigenvalues and Eigenvectors" in *Conference on Computer Vision and Pattern Recognition*, pp. 478–483, June 1996 (oral).

188. M. Heath, S. Sarkar, T. Sanocki, and K.W. Bowyer, "Edge Detector Comparison: Initial Study and Methodology" in *IEEE Conference on Computer Vision and Pattern Recognition*, pp. 143– 148, June 1996 (oral).

189. S. Sarkar, "Tracking 2D Structures Using Perceptual Organizational Principles," in *International Symposium on Computer Vision*, Coral Gables, Florida, pp. 283–288, Nov 1995 (oral).

190. S. Sarkar and K. L. Boyer, "Using Perceptual Inference Networks to Manage Vision Processes," in *International Conference on Pattern Recognition*, pp. 808—810, Oct. 1994 (oral).

191. S. Sarkar and K. L. Boyer, "Automated Design of Bayesian Perceptual Inference Networks," in *IEEE Conference on Computer Vision and Pattern Recognition*, pp 98-103, June 1994 (oral).

192. S. Sarkar and K. L. Boyer, "Computing Perceptual Organization using Voting Methods and Graphical Enumeration," in *International Conference on Pattern Recognition*, Aug. 1992 (oral).

193. S. Sarkar and K. L. Boyer, "Perceptual Organization using Bayesian Networks," in *IEEE Conference on Computer Vision and Pattern Recognition*, pp 251–256, June 1992 (oral).

194. K. L. Boyer and S. Sarkar, "Assessing the State of Art in Edge Detection: 1992," in *SPIE: Application of Artificial Intelligence X: Machine Vision and Robotics*, pp. 353– 362, April 1992.

195. K. L. Boyer, D. M. Wuescher, and S. Sarkar, "Dynamic edge warping: Experiments in disparity estimation under weak constraints," in *Third International Conference on Computer Vision*, pp. 471–475, Dec. 1990.

196. S. V. Raman, S. Sarkar, and K. L. Boyer, "Tissue boundary refinement in MRI using contour-based scale space matching," in *Symposium for Computer Assisted Radiology*, (Anaheim, CA), pp. 618–624, June 1990.

197. S. Sarkar and K. L. Boyer, "Optimal, efficient, recursive edge detection filters," in *International Conference on Pattern Recognition*, pp. 931–936, June 1990 (oral).

Refereed Workshop Papers

198. S. Vijayaraghavan, J.A. Pham, M. Calvelo, S. Das, R. Collins, M. P. Segundo, S. McCloskey, S. Sarkar, "STRIDER: Spatial Target Recognition and Identification at Extended Range," *IEEE WACV Workshop on Real World Surveillance: Applications and Challenges,* 2027.

199. S. Liang, B. Beaudett, A. Srivastava, M. Pamplona Segundo, S. Sarkar, "Latent Space Manifold Geometry for Robust Image Classification," *IEEE WACV Workshop on LENS: Learning & Exploitation of Latent Space Geometries*, pp. 1259-1268, March 2026.

200. M. Pamplona Segundo, C. Hill, and S. Sarkar, "Long range gait matching using 3D body fitting with gait-specific motion constraints," *IEEE WACV Workshop on Long Range Recognition*, Jan 2023.

201. S. T. Vijayaraghavan, R. Alqesemi, R. Dubey, and S. Sarkar, "Localize: Multi-view 3D object localization with differentiable rendering for robot grasping," *International Workshop on Assistive Computer Vision and Robotics* (ACVR), October 2022.

202. R. Mounir, A. Shahabaz, R. Gula, J. Theuerkauf, and S. Sarkar, "Towards Automated Ethogramming: Cognitively-Inspired Event Segmentation for Streaming Wildlife Video Monitoring," *CVPR Workshop on CV4Animals: Computer Vision for Animal Behavior Tracking and Modeling*, June 2022.

203. R. Mounir, A. Shahabaz, R. Gula, J. Theuerkauf, and S. Sarkar, "Spatio-Temporal Event Segmentation for Wildlife Extended Videos," *CVPR Workshop on CV4Animals: Computer Vision for Animal Behavior Tracking and Modeling*, June 2021.

204. M. Balazia and S. Sarkar, "Repurposing Evaluation in Extended Videos to Active Object Tracking," *New in Machine Learning Workshop at International Conference on Neural Information Processing Systems (NeurIPS)*, 2019.

205. S. Aakur and S. Sarkar, "Event Segmentation in Streaming Videos without Labels using a Predictive Approach," *IEEE (CVPR) Workshop on Learning from Unlabeled Videos*, June 2019.

206. S. Aakur, D. Sawyer, and S. Sarkar, "Fine-grained Action Detection in Long Surveillance Videos," *IEEE Workshop on Human Activity Detection in Multi-Camera, Continuous, Long-Duration Video*, Hawaii, 2019.

207. G. Rotich, S. Aakur, R. Minetto, M. Segundo, and S. Sarkar, "Using semantic relationships among objects for geospatial land use classification," *IEEE Applied Imagery Pattern Recognition (AIPR)*, 2018.

208. S. Aakur, F. DM de Souza, and S. Sarkar, "An Inherently Explainable Model for Video Activity Interpretation," *AAAI Workshop On Reasoning and Learning for Human-Machine Dialogues (DEEP-DIAL18)*, February 2018. (oral)

209. F. de Souza, S. Sarkar, A. Srivastava, and J. Su, "Temporally Coherent Interpretations for Long Videos Using Pattern Theory," CVPR Workshop on Vision Meets Cognition, 2015.

210. S. Sarkar and R. Panchumarthy, "Cloud computing architecture for scaling biometrics research for big data," *NSFCloud Workshop on Experimental Support for Cloud Computing*, National Science Foundation, 2014.

211. K. Duncan, S. Sarkar, R. Alqasemi, and R. Dubey, "Scene-Dependent Intention Recognition for Task Communication with Reduced Human-Robot Interaction," *Second Workshop on Assistive Computer Vision and Robotics*, Zurich, Switzerland, 2014.

212. R. Krishnan and S. Sarkar, "Similarity Measure between Two Gestures using Triplets," *IEEE-CVPR Workshop on Human Activity Understanding from 3D Data*, 2013.

213. M. Segundo, S. Sarkar, O. Bellon, L. Silva, and D. B. Goldgof, "Continuous 3D Face Authentication using RGB-D Cameras," *IEEE-CVPR Workshop on Biometrics*, 2013.

214. M. Shreve, S. Fefilatyev, N. Bonilla, G. Hernandez, D. Goldgof and S. Sarkar, "Method for Calculating View-Invariant 3D Optical Strain," *IAPR Workshop on Depth Image Analysis*, 2012.

215. S. Sarkar, B. Loeding, R. Yang, S. Nayak, A. Parashar, "Segmentation-robust representations, matching, and modeling for sign language," *IEEE Workshop on Gesture Recognition*, pp.13-19, 2011

216. S. Godavarthy, M. Shreve, D. Goldgof, S. Sarkar, and V. Manohar, "Towards Macro- and Micro-Expression Spotting in Video Using Strain Patterns," *IEEE Workshop on Applications of Computer Vision*, 2009. **(> 150 Google Scholar citations)**

217. B. Klare and S. Sarkar, "Background Subtraction in Varying Illuminations Using an Ensemble Based on an Enlarged Feature Set," *IEEE Workshop on Object Tracking and Classification Beyond and in the Visible Spectrum*, 2009.

218. S. Sarkar and S. Bhanja, "Direct Quadratic Minimization using Magnetic Field-based Computing," IEEE *International Workshop on Design and Test of Nano Devices, Circuits and Systems*, pp. 31—34, 2008

219. D. Randeniya, S. Sarkar, and M. Gunaratne, "Fusion of Vision Inertial data for Automatic Geo-referencing," *First International Workshop on Knowledge Discovery from Sensor Dat*a, 2007.

220. V. Manohar, D. Goldgof, S. Sarkar, and Y. Zhang, "Facial Strain Pattern as a Soft Forensic Evidence," *IEEE Workshop on Applications of Computer Vision*, pp. 42–48, 2007.

221. Y. Zhang, Y. Qiu, D. B. Goldgof, S. Sarkar, and L. Li, "3D Finite Element Modeling of Nonrigid Breast Deformation for Feature Registration in X-ray and MR Images," *IEEE Workshop on Applications of Computer Vision*, 2007.

222. P. Mohanty, S. Sarkar, R. Kasturi, "Privacy & Security Issues Related to Match Scores," *IEEE Workshop on Biometric Privacy and Security*, pp. 162–162, June 2006.

223. S. Nayak, S. Sarkar, and B. Loeding, "Unsupervised Modeling of Signs Embedded in Continuous Sentences," *IEEE Workshop on Vision for Human-Computer Interaction*, vol. 3, pp. 81, June 2005.

224. P. K. Mohanty, S. Sarkar, R. Kasturi, "Designing Affine Transformations based Face Recognition Algorithms," *IEEE Workshop on Face Recognition Grand Challenge*, vol. 3, pp. 173, June 2005.

225. S. Nayak, S. Sarkar, K. Sengupta, "Modeling Signs using Functional Data Analysis", *Indian Conference on Computer Vision, Graphics and Image Processing*, Dec 2004.

226. Z. Liu and S. Sarkar, "Challenges in segmentation of human forms in outdoor video," *IEEE Workshop on Perceptual Organization in Computer Vision*, June 2004.

227. Y. Zhang, D. Goldgof, S. Sarkar, "Significance of Elastic Properties in Physics-based Nonrigid

Motion Modeling, A Numerical Sensitivity Analysis," *IEEE Workshop on Articulated and Nonrigid Motion*, June 2004.

228. Y. Zhang, D. B. Goldgof, S. Sarkar, "Towards Physically-Sound Registration Using Object-Specific Properties for Regularization," *International Workshop on Biomedical Image Registration*, (published as Springer Lecture Notes in Computer Science 2717), pp. 358-366, 2003.

229. S. Sarkar, "Evaluation of Effectiveness of Incorporation of Computer Vision into Undergraduate Data Structures," in *IEEE Workshop on Combined Research-Curriculum Development in Computer Vision*, Dec. 2001.

230. P. Soundararajan and S. Sarkar, "Empirical Evaluation of Graph Partitioning Measures for Perceptual Organization," *IEEE Workshop on Empirical Evaluation Methods in Computer Vision*, 2001.

231. M. Powell, S. Sarkar, D. Goldgof, "Color Correction using Explicit Illumination Models, Color and Registered Range," in *IEEE Workshop on Photometric Modeling for Computer Vision and Graphics*, pp. 64–71, June 1999.

232. S. Sarkar and D. B. Goldgof, "Integrating Undergraduate Level Data Structures Education and Image Computation," in *IEEE Computer Society Workshop on Undergraduate Education & Image Computation*, June 1997.

233. L. Tsap, D. B. Goldgof, S. Sarkar, and P. Powers, "Experimental results of a vision-based burn scar assessment technique" in *IEEE Workshop on Biomedical Image Analysis*, Santa Barbara, pp. 193–201, June 1998.

234. L. Tsap, D. B. Goldgof, and S. Sarkar, "Human skin and hand motion analysis from range image sequences using non-linear FEM," in *IEEE Nonrigid and Articulated Motion Workshop*, pp. 80–89, San Juan, Puerto-Rico, June 1997.

235. T. Sanocki, K. Bowyer, J. Adair, and S. Sarkar, "Are Real Edges Sufficient for Object Recognition?" in *Annual Meeting of the Association of Research in Vision and Opthalmology,* May, 1995.

Books/Journal Special Issues

236. J. F. Martínez Trinidad, J. A. Carrasco-Ochoa, J. A. Olvera-López., and S. Sarkar, "Pattern Recognition," 10th Mexican Conference on Pattern Recognition 2018, Springer, 2018.

237. S. Sarkar and A. Roy-Choudhury, Edited Section on "Image and Video-based Analytics" in Academic Press Library in Signal Processing: Image and Video Processing and Analysis and Computer Vision, R. Chellappa and Sergios Theodoridis (Eds), Academic Press, ISBN 978-0-12-811889-4, 2018.

238. J. Lu, R. Wang, A. Mian, A. Kumar, S. Sarkar, "Distance Metric Learning for Pattern Recognition, Special Issue of *Pattern Recognition* Journal, 2017.

239. L. Silva, S. Sarkar, C. Maria Dal Sasso Freitas, R. Scopigno, "SIBGRAPI 25th: Advances in Pattern Recognition and Computer Vision," Special Issue in *Pattern Recognition Letters,* vol. 39, no. 1, 2014.

240. K. L. Boyer and S. Sarkar (eds), "Perceptual Organization for Artificial Vision Systems," Kluwer Academic Publishers, 2000, ISBN: 079-23-7799-0.

241. K. L. Boyer and S. Sarkar, "Perceptual Organization in Computer Vision," Computer Vision and Image Understanding on Perceptual Organization in Computer Vision, Oct 1999.

242. S. Sarkar and K. L. Boyer, "Computing Perceptual Organization in Computer Vision," World Scientific, 1994, ISBN: 981-02-1832-X. **(> 100 Google Scholar citations)**

Book Chapters

243. R. Mounir, S. M. Aakur, and S. Sarkar, "Self-supervised temporal event segmentation inspired by cognitive theories," in Advanced Methods in Deep Learning in Computer Vision, E. R. Davies and M. Turk (Eds.), Elsevier, 2021.

244. S. N. Aakur, F. D. M. de Souza, and S. Sarkar, "On the Inherent Explainability of Pattern Theory-Based Video Event Interpretations," in Explainable and Interpretable Models in Computer Vision and Machine Learning, H. J. Escalante, S. Escalera, I. Guyon, X. Baró, Y Güçlütürk (Eds.), Springer Link, 2018.

245. S. Nayak, K. Duncan, S. Sarkar, and B. Loeding, "Finding Recurrent Patterns from Continuous Sign Language Sentences for Automated Extraction of Signs," in Gesture Recognition, Springer International Publishing, 2017.

246. R. Subramanian, S. Sarkar and Z. Liu, "Evaluation of Gait Recognition," in *Encyclopedia of Biometrics*, Stan Li and Anil Jain (Eds.), Second Edition, Springer, pp. 789—799, ISBN 978-1-4899-7488-4, 2015.

247. M. Shreve, S. Fefilatyev, N. Bonilla, G. Hernandez, D. Goldgof, S. Sarkar, "View-Invariant Method for Calculating 2D Optical Strain," in Advances in Depth Image Analysis and Applications Lecture Notes in Computer Science, X. Jiang, O. Bellon, and D. Goldgof (Eds), Springer, pp. 42—49, 2013.

248. J. Pulecio, S. Bhanja, and S. Sarkar, "Parallel Energy Minimizing Computation via Dipolar Coupled Single Domain Nanomagnets," in Nanoelectronic Device Applications Handbook, James E. Morris & Krzysztof Iniewski (Eds.), CRC Press, 2013.

249. A. Khemlani, K. Duncan, and S. Sarkar, "People Counter: Counting of Mostly Static People in Indoor Conditions," in *Video Analytics for Business Intelligence*, Caifeng Shan, Fatih Porikli, Tao Xiang, and Shaogang Gong (Eds.), Springer-Verlag, 2012.

250. S. Sarkar and Z. Liu, "Gait," in *Encyclopedia of Cryptography and Security*, Henk C.A. van Tilborg and Sushil Jajodia (Eds.), Springer-Verlag, 2011.

251. S. Sarkar and B. Loeding, and Ayush Parashar, "Fusion of Manual and Non-Manual Information in American Sign Language Recognition," in *Handbook of Pattern Recognition and Computer Vision (4th Edition)*, C. H. Chen (Ed.), CRC Press, 2010.

252. S. Sarkar and Z. Liu, "Evaluation of Gait Recognition," in *Encyclopedia of Biometrics*, Stan Li and Anil Jain (Eds.), Springer, 2009.

253. D. Randeniya, M. Gunaratne, and S. Sarkar, "Fusion of Vision Inertial Data for Automatic Georeferencing," in *Knowledge Discovery from Sensor Data*, Taylor and Francis/CRC Press, Chapter 7, pp. 105—128, 2008.

254. S. Sarkar and Z. Liu, "Recognition from Gait," in *Handbook of Biometrics*, A. K. Jain, P. Flynn, and A. Ross (Eds.), Springer, 2007.

255. K. Boyer, D. Fagerstrom, M. Kubovy, P. Johansen, and S. Sarkar, "Focused Deliberations: Spatiotemporal Grouping," in *Perceptual Organization for Artificial Vision Systems*, Kluwer Academic Publishers, pp. 33–38, 2000.

256. L. V. Tsap, D. B. Goldgof and S. Sarkar, "Soft Tissue Analysis via Finite Element Analysis," in *SPIE Handbook on Medical Imaging -Volume 2: Medical Image Processing and Analysis*, M. Sonka and M. Fitzpatrick (Eds.), SPIE Press, Chapter 19, pp. 1153—1201, 2000.

257. S. Chavali and S. Sarkar, "Parameter Selection for Performance Characterization of Vision Algorithms," in *Computer Vision, Graphics, and Image Processing: Recent Advances* (S. Chaudhury and Shree Nayar eds.), Viva Book Private Limited, Delhi, pp. 64–69, Dec 1998.

258. K. L. Boyer, S. V. Raman, and S. Sarkar, "Generating structure hypotheses in cerebral magnetic resonance images using segment based focusing and graph theoretic cycle enumeration," in *Advances in Image Analysis* (Y. Mahdavieh and R. C. Gongalez), SPIE Optical Engg. Press, 1992.

Abstract-Refereed Papers and Presentations

259. C.-Y. Pai, H. Morera, S. Sarkar, K. Hall, L. Cowan, P. A. Toyinbo, M. J. Peterson, and D. Goldgof. "Automatic pressure ulcer measurement using RGB-D data," *Proceedings SPIE 10953, Medical Imaging 2019: Biomedical Applications in Molecular, Structural, and Functional Imaging*, 1095320, pp. 1-7 (15 March 2019); doi: 10.1117/12.2512535.

260. S. Aakur, D. Sawyer, M. Balazia, and S. Sarkar, "An Examination of Proposal-based Approaches to Fine-grained Activity Detection in Untrimmed Surveillance Videos," *NIST TRECVID Workshop*, 2018.

261. M. J. Peterson, C. Y.Pai, H. Morera, K. Hall, L. Cowan, P. Toyinbo, S. Sarkar, D. Goldgof, "Automated Pressure Ulcer Measurement for Veterans with Spinal Cord Injury," *Advanced Treatments and Technologies in Wound Care*, London, UK, 2018.

262. S. Aakur, F. de Souza and S. Sarkar, "An Inherently Explainable Model for Video Activity Interpretation," *AAAI Workshop On Reasoning and Learning for Human-Machine Dialogues (DEEP-DIAL18),* February 1-8, 2018, New Orleans, LA, USA.

263. F. de Souza, S. Sarkar, A. Srivastava, and J. Su, "Video Event Understanding using Pattern Theory," *Workshop on Computational and Mathematical Models in Vision (MODVIS*), May, 2015.

264. R. Panchumarthy, D. Karunaratne, S. Sarkar, S. Bhanja, "Image Processing Tool to Characterize the Magnetic States of Nano-Magnetic Disks," *12th Joint Magnetism and Magnetic Materials/InterMag Conference*, Jan 2013.

265. S. Rajaram, D. Karunatne, S. Sarkjar, S. Bhanja, "Effect of Neighbor Interaction among Nano-Magnetic Disks," *12th Joint Magnetism and Magnetic Materials/InterMag Conference*, Jan 2013.

266. R. Krishnan, F. Souza, K. Duncan, S. Sarkar, B. Loeding, "Sign Language Tutor," *Inaugural Conference of the National Academy of Inventors*, Feb 2012.

267. A. Kumari, S. Bhanja, and S. Sarkar, "Study of Magnetization State Transition in Coupled Nanomagnet for Computation," *55th Magnetism and Magnetic Materials Conference*, Nov. 2010.

268. Z. Liu and S. Sarkar, "Outdoor biometrics over time by Fusing gait with face," *The Biometric Consortium Conference: Biometrics Research Symposium*, Sept. 2004.

269. Z. Liu, L. Malave, A. Osuntugun, P. Sudhakar, and S. Sarkar, "Towards Understanding the Limits of Gait Recognition," *SPIE Defense and Security Symposium on Biometric Technology for Human Identification*, April 2004.

270. J. Byrne, A. Gandhe, R. Prasanth, B. Ravichandran, M. Huff, R. Mehra, S. Sarkar, S. K. Mitter, S. Casadei, "A k-partition, Graph Theoretic Approach to Perceptual Organization," *IEEE Conference on Integration of Knowledge Intensive Multi Agent Systems (KIMAS)*, pp. 336-342, Oct. 2003.

271. S. Sarkar, "An introduction to perceptual organization," *IEEE Conference on Integration of Knowledge Intensive Multi-Agent Systems*, pp. 330–335, Oct. 2003.

272. J. Byrne, *et al.* and S. Sarkar, "A k-partition, graph theoretic approach to perceptual organization," *IEEE Conference on Integration of Knowledge Intensive Multi-Agent Systems*, pp. 336–342, Oct. 2003.

273. L. Zhou, S. Sarkar, D. Goldgof, D. Hilbelink, K. Muffly, "Computer Aided Image Analysis on Human Skin Histology Images," in *FASEB:Experimental Biology*, C225A, Orlando, Florida, April 2001 (abstract).

274. S. Sarkar, D. B. Goldgof, P. Powers, L. Tsap, M. Powell, "Objective Evaluation of Burn Scars using Computer Vision Techniques," in *Annual Meeting of the American Burn Association*, pp. S165, March 1999. (Published as an issue of the *Journal of the Burn Care and Rehabilitation*, vol. 20, no. 1, part 2, Jan/Feb 1999.)

275. M. W. Powell, S. Sarkar, D. B. Goldgof, P. Powers, and W. C. Cruse, "Progress in color-texture assessment of burn scars," in *Annual Regional Burn Seminar, Southern Medical Association*, Dec 1998.

276. S. Sarkar, L. Tsap, D. B. Goldgof, and P. Powers, "Progress in scar assessment," in *Tenth Annual Regional Burn Seminar,* Southern Medical Association, Dec 1997.

277. S. Sarkar, P. Powers, K. Bowyer, "Facial Scar Assessment," in *Eighth Annual Regional Burn Seminar*, Southern Medical Association, Nov 1995.

14. Invited Presentations and Talks

1. Keynote Speaker, 17th International Conference on Contemporary Computing (IC3), Noida, India, August 2025.
2. Infosys Center for Artificial Intelligence Seminar Speaker, IIIT Delhi, India, July 2023.
3. Invited Speaker, AI for Social Good, Winter School on Responsible AI, IIT Jodhpur, India, December 2022.
4. Keynote Speaker, Amazon Workshop on Video/Audio Quality in Computer Vision: Machine Learning and Beyond @ACVC 2022, August 3, 2022.
5. Invited Speaker, IEEE Summit On Future Technology, Big Data & AI Application, August 16, 2022.
6. Keynote Speaker at the Machine Learning and Data Science Workshop organized by the

Technology Innovation Hub, Indian Statistical Institute, Kolkata, June 10, 2022.

7. Keynote Speaker at the 4th International Conference on Computational Intelligence in Pattern Recognition (CIPR) (www.cipr.in) at IIEST Shibpur, Kolkata, India, April 23&24, 2022.
8. Keynote Talk at the Workshop on Reasoning and Learning for Human-Machine Dialogues at the Thirty-Fifth AAAI Conference on Artificial Intelligence (AAAI-21), February 9, 2021,
9. Invited Speaker at Recent Advances in Statistical Analysis of Imaging Data, American Statistical Association, Section on Imaging, Dec 4-5, 2020.
10. Invited Speaker at SIAM MDS 2020 Mini-symposium on Foundations and Applications of Geometric Methods in Functional and Shape Data Analysis, June 2020.
11. Keynote Speaker at ACM Southeast Conference, April 2020.
12. Invited Speaker at Jadavpur University, India, November 2019.
13. Plenary Speaker, NSF workshop on "Scientific Computing meets Machine Learning and Life Science," October 2019.
14. Panel moderator for Synapse Summit 2019 TiE Panel: Artificial Intelligence - Reshaping the Business, Tampa, January 2019.
15. Invited participant to a joint NAS, NAE, and NAM workshop on "Fostering the Culture of Convergence in Research," at the National Academy of Sciences building in Washington, DC, Oct 2018. The Kavli Foundation supported the workshop and reflects the ongoing interest among the National Academies, funding organizations, universities, and others to foster strategies and practices that enable effective research across fields.
16. Panelist for Forging Pathways to Impactful Careers, 34th Annual McKnight Fellows' Meeting & 23rd Annual Graduate School Conference, November 2018.
17. Panel moderator for The Indus Entrepreneurs (TiE) Series Tech Panel: Artificial Intelligence - Reshaping the business, Tampa, October 2018.
18. Panelist for NSF I-Corps: Accelerating Innovations to Market, US Capitol, Washington, DC. The event was organized by Congressman Dan Lipinski (IL-03), September 6, 2018
19. Keynote Speaker, Mexican Conference on Pattern Recognition (MCPR), Huatulco, Mexico, 2017.
20. Keynote Speaker, Joint IAPR International Workshops on Structural and Syntactic Pattern Recognition (SSPR) and Statistical Techniques in Pattern Recognition, Merida, Mexico, 2016.
21. Plenary Speaker, International conference on Intelligent Human Computer Interaction (IHCI), Pilani, India, 2016.
22. Invited Seminar, Computer Science Department, National Institute of Technology, Durgapur, India, 2016.
23. Talk at the Computer Science Department, Pontifica Universidade Catolica do Rio Grande Do Sul (PUCRS), Brazil, September 2015.
24. Invited Speaker at the Biometrics, Identity & Security (BIdS) Research Showcase, Biometrics Consortium Conference, Florida, September 2013.

25. Invited Speaker, Centre for Interdisciplinary Mathematics at Uppsala University, Sweden, 2013.
26. Invited Speaker at the Panel on The Research University as Economic Development Agency, Senior Leadership Institute, Orlando, Florida, September 2012.
27. Invited Speaker at IEEE Workshop on Gesture Recognition, Denver, CO, June 2011.
28. Invited Speaker at SIBGRAPI: Conference on Graphics, Patterns and Images, August 2010.
29. Invited Talk, Electrical Engineering, Old Dominion University, November 2010.
30. Invited Talk, Computer Science and Engineering, University of South Carolina, April 2010.
31. IEEE-CS Distinguished Speaker Talk, University of Louisville, Kentucky, March 2010.
32. IEEE-CS Distinguished Speaker Talk, IEEE Rochester NY Section's Joint Chapters Meeting, March 2010.
33. IEEE-CS Distinguished Speaker Talk, Rochester Institute of Technology, March 2010
34. Invited Speaker Talk, Kodak Research Labs, Rochester, March 2010
35. Keynote Speaker at Mohawk Valley Technology Symposium at the State University of New York Institute of Technology, March 2010.
36. "Inverse Biometrics: From Scores to Templates," Invited Talk at IEEE International Conference on Biometrics, Identity & Security (BIdS), Biometrics Consortium Conference and Technology Expo, Tampa, 2009.
37. Invited talk at the Dr. Homi J. Bhabha Birth Centenary Workshop on Introduction to Graph and Geometric Algorithms, Indian Institute of Science, Bangalore, 2009.
38. Workshop on Challenges and Opportunities in Image Understanding, US Army, Washington DC, Jan 2007, (Invited speaker and participant).
39. Keynote speaker at the IEEE Workshop on Vision for Human Computer Interface (V4HCI) NYC, June 2006.
40. Talk on Human at a Distance at the Advanced Concept Technology Demonstration (ACTD) Candidate: Biometric Identification Targeting Exploitation (BITE), 2005.
41. Tutorial on Video Surveillance at the Annual Meeting of the Center on Search, Security and Rescue (SSR-RC), 2005.
42. Florida State University, 2005.
43. Workshop on Early Cognitive Vision, Isle of Skye, Scotland, May 2004 (Keynote lecture).
44. International Conference on Integration of Knowledge Intensive Multi-Agent System, 2003 (KIMAS'03), October 2003.
45. Central Mining Engineering Research Institute (CMERI), Durgapur, Aug 2003.
46. University of Delaware, October 2002.
47. University of Florida, December 2000.
48. Tata Institute of Fundamental Research, Mumbai, India, January and April 2000.

49. Aeronautical Development Establishment, Bangalore, India, March 2000.
50. Michigan State University, US, May 1998.
51. NEC Research Institute, Princeton, US, November 1997.
52. Indian Statistical Institute, Calcutta, India, December 1997.
53. Center for Artificial Intelligence and Robotics, Bangalore, India, June 1995.

15. Competitions and Contests Won

1. Functional Map of the World Challenge, Intelligence Advanced Research Projects Activity (IARPA), 3rd place out of 70, 2017
2. xView1 Challenge, US Department of Defense, 3rd place, 2018
3. IAPR Unconstrained Ear Recognition Challenge, University of Ljubljana, 2nd out of 13, 2019
4. Rapid Action Coronavirus Earth Observation (RACE) upscaling competition, European Space Agency, 1st prize, 2020

16. Patents (> 175 citations by other patents)

1. M. J. Peterson, L. J. Cowan, K. S. Hall, D. Goldgof, S. Sarkar, C. Y. Pai, H. Morera, Y. Sun, "Automatic pressure ulcer measurement," United States Patent 12,524,899. January 13, 2026, (cited by 7 patents)
2. R. Krishnan, A. Parashar, S. Sarkar, "Automatic generation of structured data from semi-structured data," United States Patent 10,467,244, November 5, 2019. (cited by 42 patents, 80 Google Scholar citations, licensed)
3. S. Sarkar, M. P. Segundo, E. Hansley, "Unconstrained Ear Recognition using Combination of Deep Learning and Handcrafted Features," United States Patent No. 10,423,823 on Sept. 24, 2019. (cited by 12 patents)
4. S. Sarkar, R. Subramanian, and M. Labrador, "Orientation Invariant Gait Matching," U.S. Patent No. 10,321,855 on June 18, 2019. (cited by 8 patents, 10 Google Scholar citations)
5. S. Bhanja, S. Sarkar, R. Panchumarthy, and D. K. Karunaratne, "Magnetic Coprocessor and Method of Use," United States Patent 10,198,402, on February 5, 2019.
6. S. Sarkar, R. Subramanian, and M. Labrador, "Orientation Invariant Gait Matching," United States Patent 9,877,668 on January 30, 2018. (cited by 8 patents, 17 Google Scholar citations)
7. S. Bhanja, S. Sarkar, R. Panchumarthy, and D. K. Karunaratne, "Programmable Magnetic Energy Minimizing Co-Processor (MEMCOP), United States Patent 9,720,599, on August 1, 2017.
8. R. Panchumarthy, D. K. Karunaratne, S. Sarkar, and S. Bhanja, "System and Method for Estimating the Magnetization States of a Nanomagnet Array," United States Patent 9,286,687 on March 15, 2016. (cited by 1 patent)
9. P. Mohanty, S. Sarkar, R. Kasturi, P. Jonathon Phillips, "Indexing Face Templates Using Linear Models," United States Patent 8,331,632, December 12, 2012. (cited by 33 patents, 46

Google Scholar citations)

10. P. Mohanty, S. Sarkar, R. Kasturi, "Reconstruction of Biometric Image Templates Using Match Scores," United States Patent 8,165,352, April 24, 2012. (cited by 51 patents, **>100 Google Scholar citations**)
11. L. V. Tsap, D. B. Goldgof, and S. Sarkar, "Computer Vision-Based Technique for Objective Assessment of Material Properties in Nonrigid Objects," United States Patent 6,594,381, July 15, 2003. (cited by 22 patents, 47 Google Scholar citations)

17. Personal: US citizen, married, with 2 children.

Table of Contents

1. Educational Background 1
   Doctor of Philosophy (Electrical Engineering) 1
   Master of Science (Electrical Engineering) 1
   Bachelor of Technology (Electrical Engineering) 1
2. Honors 2
3. Work Experience 3
   Launch Dean (Interim), Bellini College of Artificial Intelligence, Cybersecurity and Computing, Dec 2024–present 3
   Co-Director, USF Institute for Artificial Intelligence + X, 2019 to present 4
   Chair, Computer Science and Engineering, USF, Dec 2016 – Dec 2024 4
   Associate Vice-President for Special Programs, University of South Florida, 2017-2022 4
   Distinguished University Professor, University of South Florida, 2021–current 4
   Professor in Computer Science and Engineering, University of South Florida, 2004–2021 5
   Research Associate, WOC, Tampa Veterans Administration R&D, 2017-2021 5
   Associate VP for Research & Innovation, University of South Florida, 2012-2016 5
   Research Admin Faculty Fellow, University of South Florida, Tampa, 2009 – 2012 5
   Associate Professor, Computer Sci. & Engg., University of South Florida, 1999 – 2004 5
   Assistant Professor, Computer Sci. & Engg., University of South Florida, 1993 – 1999 5
4. Professional Affiliations 5
5. Post-Doctoral Scholars 6
6. Students Advised 6
   Current students: 6
   Doctoral Students Graduated: 6
   Master's Students Graduated: 8
   Undergraduate Students (REUs, Senior Projects, etc.) 9
7. Departmental, College, and University Services 10
8. Professional and External Services 11
   Leadership Capacities 11
   Editorial 12
   Advisory Committee 13
   Committees: Conference and others 13
9. Education Grants 15

10. Education-Related Publications/Tutorials 15
11. Courses Taught 16
12. Grants and Contracts (> $26.5 million in total) 16
Current 16
Past 17
13. Publications 20
Refereed Journal Papers 20
Full Paper Refereed Conference Papers 27
Refereed Workshop Papers 35
Books/Journal Special Issues 37
Abstract-Refereed Papers and Presentations 39
14. Invited Presentations and Talks 40
15. Competitions and Contests Won 43
16. Patents (> 175 citations by other patents) 43
17. Personal: US citizen, married, with 2 children. 44