Siddharth Singh Savner

siddharth-singh.savner@inria.fr

+33 7 75 74 27 29, +91 99266 90703,

DOB: 15/08/1988

Education

2019 – 2024 **Ph.D., Indian Institute of Technology (IIT) Indore, India** in Electrical Engineering. CGPA: 8/10
Thesis title: *Advancing Deep Learning-Based Crowd Counting: Weakly-Supervised Approaches, Active Learning, and Uncertainty Quantification.*

2011 – 2014 **M.Tech., Rajiv Gandhi Proudyogiki Vishwavidyalaya, Bhopal (M.P.), India** in Digital Communication. CGPA: 8.17/10
Thesis title: *Design of Two-Channel Linear Phase Biorthogonal Wavelet Filter Banks Via Convex Optimization.*

2006 – 2010 **B.E., Rajiv Gandhi Proudyogiki Vishwavidyalaya, Bhopal (M.P.), India** in Electronics and Communication Engineering. Percentage Score: 69.4%
Thesis title: *Design of Reed-Solomon and LDPC Codes for error correction.*

Publications

Journal Articles

1. S. S. Savner and V. Kanhangad, "CrowdNeXt: Boosting weakly-supervised crowd counting with dual path feature aggregation and a robust loss function," *IEEE Transactions on Instrumentation and Measurment*, [Accepted].
2. S. S. Savner and V. Kanhangad, "Count with confidence: Calibrated confidence interval prediction for crowd counting," *IEEE Transactions on Artificial Intelligence [Under review]*,
3. S. S. Savner and V. Kanhangad, "Uncertainty-guided feature fusion for improved multimodal crowd counting," *Signal Processing Letters [Submitted]*,
4. S. S. Savner and V. Kanhangad, "Crowd counting from limited labeled data using active learning," *IEEE Signal Processing Letters*, vol. 30, pp. 1662–1666, 2023. DOI: 10.1109/LSP.2023.3330412.
5. S. S. Savner and V. Kanhangad, "CrowdFormer: Weakly-supervised crowd counting with improved generalizability," *Journal of Visual Communication and Image Representation*, vol. 94, p. 103 853, 2023, ISSN: 1047-3203. DOI: 10.1016/j.jvcir.2023.103853.

Patent

1. V. Kanhangad, H. Bardhan, H. Chaube, and **S. S. Savner**, "System and method for wide-area crowd counting using drones and artificial intelligence." [Patent filed].

Research Interests

Signal Processing, Computer Vision, Deep Learning, Crowd Counting, Uncertainty Quantification, Active Learning, Probabilistic Modeling, and Visual Perception and Localization for Robotics and Autonomous Vehicles.

Work Experience

Jan. 2025 – Present — **Postdoctoral Researcher** National Institute for Research in Digital Science and Technology (Inria), Sophia Antipolis, France,

July 2019 – Nov. 2024 — **Teaching Assistant** Department of Electrical Engineering, Indian Institute of Technology (IIT), Indore (M.P.) India. (**Courses:** Digital Signal Processing, Advanced Signal Processing).

July 2014 – July 2018 — **Assistant Professor** Department of Electronics and Communication Engineering, Acropolis Institute of Technology and Research, Indore (M.P.) India. (**Courses taught**: Electric Circuits, Digital Circuits and Systems, Signals and Systems, Digital Signal Processing, Communications Systems).

Achievements

1. Awarded a prestigious fellowship from the Ministry of Education, Government of India, to pursue a PhD at IIT Indore.
2. Qualified the Graduate Aptitude Test in Engineering (GATE) 2018 in Electronics and Communication Engineering, securing an All India Rank of 4600 among 125,870 candidates.
3. Qualified the Graduate Aptitude Test in Engineering (GATE) 2016 in Electronics and Communication Engineering, securing an All India Rank of 19,113 among 152,318 candidates.

Certifications

edx — **Principles of Electric Circuits**, Tsinghua University.

NPTEL — **Analog Circuits**, IIT Madras.

Coursera — **Machine Learning**, Stanford University.

Deep Learning Specialization, DeepLearning.AI.

Skills

MATLAB, Python, PyTorch, LaTeX.

References

1. **Dr. Ezio Malis**, Research Director, ACENTAURI, Inria, Sophia Antipolis, France. **Email:** ezio.malis@inria.fr, **Tel:** +33 (0)4 92 38 50 80.
2. **Prof. Vikram M. Gadre**, Professor, Department of Electrical Engineering, Indian Institute of Technology Bombay, India. **Email:** vmgadre@ee.iitb.ac.in, **Tel:** (0091 22) - 2576 7426
3. **Prof. Vivek Kanhangad**, Professor, Department of Electrical Engineering, Indian Institute of Technology Indore, India. **Email:** kvivek@iiti.ac.in, **Tel:** +91 731 660 3270
4. **Dr. Manish Sharma**, Associate Professor, Electrical and Computer Science Engineering, AInstitute of Infrastructure, Technology, Research And Management, Ahmedabad, Gujarat, India. **Email:** manishsharma@iitram.ac.in, **Tel:** +917967775439.
5. **Prof. Kamlesh Gupta**, Professor, Department of Electronics and Communication Engineering, Acropolis Institute of Technology and Research, Indore, India. **Email:** kamleshgupta@acropolis.in, **Tel:** +91 731 4730000.