





Abhishek Aich

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RESEARCH INTERESTS

Computer Vision, Deep Learning, and Sparse Signal Optimization
• Specific Interests: Learning from Videos

EDUCATION

University of California, Riverside, California, USA

- Ph.D. in Electrical and Computer Engineering
- Adviser: Prof. Amit K. Roy-Chowdhury
- GPA: 3.84 / 4.00

Sep 2018 – Present

National Institute of Technology, Tiruchirappalli, Tamil Nadu, India

- M.S. in Electronics and Communication Engineering
- Thesis: Exploiting Sparsity for Direction of Arrival Estimation Algorithms in Linear Array
- Adviser: Prof. P. Palanisamy
- GPA: 8.80 / 10.00

2016 – 2018

Biju Patnaik University of Technology, Odisha, India

- B.Tech. in Electronics and Communication Engineering
- Thesis: Target Tracking using Parametric Spectral Estimation Methods
- Supervisor: Prof. Utpal K. Dash
- GPA: 9.02 / 10.00

2011 – 2015

RESEARCH EXPERIENCE

Mitsubishi Electric Research Laboratories, Cambridge

- Research Intern
- Mentors: Dr. Kuan-Chuan Peng
- Group: Computer Vision Group
- Focus: Video Anomaly Detection.

Massachusetts, USA

Jun 2021 – Sep 2021

United Imaging Intelligence, America, Cambridge

- Research Intern
- Group: Vision and Robotics Group
- Mentors: Dr. Ziyang Wu, Dr. Srikrishna Karanam, Dr. Meng Zheng
- Focus: Video-based Person Re-Identification.

Massachusetts, USA

Jun 2020 – Sep 2020

University of California, Riverside

- Graduate Student Researcher
- Group: Video Computing Group
- Supervisor: Prof. Amit K. Roy-Chowdhury
- Focus: Computer Vision and Deep Learning.

California, USA

Sep 2018 – Present

National Institute of Technology, Tiruchirappalli

- Research Scholar
- Group: Signal and Image Processing Lab.
- Supervisor: Prof. P. Palanisamy
- Focus: Array Signal Processing, Compressed Sensing.

Tamil Nadu, India

Feb 2016 – Apr 2018

Silicon Institute of Technology, Bhubaneswar

- Research Assistant
- Supervisor: Prof. Utpal K. Dash
- Focus: Array Signal Processing.

Odisha, India

May 2014 – Aug 2015

TEACHING EXPERIENCE

University of California, Riverside

- Teaching Assistant
- Course: Senior Design Project (EE175A/B, Computer Vision)
- Supervisor: Prof. Amit K. Roy-Chowdhury

California, USA

Fall 2019(/2020) – Winter 2020(/2021)

National Institute of Technology, Tiruchirappalli

- Teaching Assistant
- Graduate Course: Digital Signal and Image Processing Lab. (EC610)
- Supervisor: Prof. P. Palanisamy

Tamil Nadu, India

Jan 2018 – Apr 2018

SELECTED PUBLICATIONS

- [1] Akash Gupta, Abhishek Aich, and Amit K. Roy-Chowdhury, "ALANET: Adaptive Latent Attention Network for Joint Video Deblurring and Interpolation", *ACM International Conference on Multimedia (ACM MM)*, 2020. (Oral)
- [2] Abhishek Aich*, Akash Gupta*, Rameswar Panda, Rakib Hyder, M. Salman Asif, and Amit K. Roy-Chowdhury, "Non-Adversarial Video Synthesis with Learned Priors", *IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*, 2020. (* joint first authors)
- [3] Akash Gupta, Abhishek Aich, Kevin Rodriguez, G. Venugopala Reddy, and Amit K. Roy-Chowdhury, "Deep Quantized Representation for Enhanced Reconstruction", *ISBI 2020 Workshop*, 2020.
- [4] Abhishek Aich, and P. Palanisamy, "A Novel CS-Beamformer root-MUSIC Algorithm and its Subspace Deviation Analysis", *IEEE Region 10 Conference (TENCON)*, 2017.
- [5] Abhishek Aich, and P. Palanisamy, "On Application of OMP and CoSaMP Algorithms for DOA Estimation Problem", *IEEE International Conference on Communication and Signal Processing (ICCSP)*, 2017. (Oral)
- [6] Abhishek Aich, and P. Palanisamy, "A Strict Bound for Dimension of Measurement Matrix for CS-Beamformer MUSIC Algorithm", *IEEE Region 10 Conference (TENCON)*, 2016. (Oral)

AWARDS & SCHOLARSHIPS

- **Student Volunteer Award.** NeurIPS 2020, ICLR 2021 2020 – 2021
- **Deans Distinguished Fellowship Award.** University of California, Riverside 2018 – 2019
- **MHRD Scholarship.** Govt. of India 2016 – 2018
- **Scholar's Club.** Silicon Institute of Technology, Bhubaneswar 2012 – 2015
 - For being in the Top 3 of the Electrical and Communication Engineering Department
- **e-Medhabruti Scholarship.** Govt. of Odisha 2012 – 2015

TECHNICAL SKILLS

- **Programming Skills:** Python, MATLAB
- **Deep Learning Libraries:** PyTorch
- **Scientific Computing Libraries:** numpy, scipy, sciKit-learn, matplotlib
- **Others:** L^AT_EX, MS Office, OpenCV, Jupyter

GRADUATE COURSES

- Introduction to Deep Learning • Adv. Computer Vision • Machine Learning • Information Theory • Convex Optimization • State and Parameter Estimation Theory • Stochastic Processes • Sparsity, Structure, and Inference • Math. Methods for EE • Adv. Digital Signal Processing

PROFESSIONAL ACTIVITIES

- Conference Reviewer:**
ICCV 2021, CVPR 2021–(HVU, TCV, DNetCV)/2020–NAS, ECCV 2020–MVA, IEEE TENCON 2016/2017
- Journal Reviewer:**
IEEE TIP, IEEE TSP, TF IJEL, IET SP