





# Abhishek Aich

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## RESEARCH INTERESTS

Computer Vision, Deep Learning, and Sparse Signal Optimization

- Specific Interests: Adversarial Attacks, Image/Video Reconstruction/Enhancement, Person Re-Identification

## EDUCATION

**University of California, Riverside, CA, 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, 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**

MA, USA

- Research Intern
- Mentors: Dr. Kuan-Chuan Peng
- Focus: Anomaly Detection.

Jun 2021 – Sep 2021

**United Imaging Intelligence, America, Cambridge**

MA, USA

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

Jun 2020 – Sep 2020

**University of California, Riverside**

CA, USA

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

Sep 2018 – Present

**National Institute of Technology, Tiruchirappalli**

Tamil Nadu, India

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

Feb 2016 – Apr 2018

**Silicon Institute of Technology, Bhubaneswar**

Odisha, India

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

May 2014 – Aug 2015

## TEACHING EXPERIENCE

**University of California, Riverside**

CA, USA

- Teaching Assistant
- Under-Graduate Course: Senior Design Project (Computer Vision) (EE175A/EE175B)
- Supervisor: Prof. Amit K. Roy-Chowdhury

Sep 2020 – Mar 2021

**University of California, Riverside**

CA, USA

- Teaching Assistant
- Under-Graduate Course: Senior Design Project (Computer Vision) (EE175A/EE175B)
- Supervisor: Prof. Amit K. Roy-Chowdhury

Sep 2019 – Mar 2020

**National Institute of Technology, Tiruchirappalli**

Tamil Nadu, India

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

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**, ICLR 2021 2021
- **Student Volunteer Award**, NeurIPS 2020 2020
- **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<sup>A</sup>T<sub>E</sub>X, 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