Nithin C Babu

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Research Interests

- **Visual Quality Assessment with Deep Learning**: Machine learning methods for assessing user/AI-generated content.

Education

- **Indian Institute of Science, Bangalore** — Bangalore, Karnataka
  Ph. D. in Electrical Communication Engineering | CGPA : 9.0/10 — *October 2020 - Present*
  - Research Advisor : Dr. Rajiv Soundararajan
- **Government Engineering College, Thrissur** — Thrissur, Kerala
  Bachelor of Technology in Electronics and Communication Engineering | CGPA : 8.03/10 — *Aug 2015 - July 2019*
- **Kendriya Vidyalaya Thrissur** — Thrissur, Kerala
  CBSE Senior Secondary Examination | Computer Science | Percentage : 94.4% — *2015*
- **Kendriya Vidyalaya Thrissur** — Thrissur, Kerala
  CBSE Secondary Examination | CGPA: 10/10 — *2013*

Research Publications

- Vignesh Kannan, Sameer Malik, Nithin C. Babu, and Rajiv Soundararajan. Quality assessment of low-light restored images: A subjective study and an unsupervised model. *IEEE Access*, 11:68216–68230, July 2023
- Nithin C. Babu, Vignesh Kannan, and Rajiv Soundararajan. No reference opinion unaware quality assessment of authentically distorted images. In *Proceedings of the IEEE/CVF Winter Conference on Applications of Computer Vision (WACV)*, pages 2459–2468, January 2023

Internships and Training

- **Adobe India, Bangalore** — *May 2024 - August 2024*
  - Research Intern for three months. Focused on evaluating the quality of AI-generated videos through subjective experiments and developing quality metrics that correlate well with human perception.
- **Elvicto Technologies Private Limited, Technopark, Trivandrum** — *July 2018*
  - Project Intern for one month in designing and developing Smart Sensors based on IoT and LoRaWAN Technologies for Smart City developments.
- **National Institute of Electronics and Information Technology, Calicut** — *June 2017 - July 2017*
  - Completed a one-week internship in Embedded System Design and IoT on Raspberry Pi.

Academic Projects

- **Adversarial attacks on Perceptual Quality Metrics trained on Authentically Distorted Images and Defense strategies**: *June 2021*
  - ***Advanced Image Processing Course Project***: Analyzed the effect of adversarial attacks on deep-feature based perceptual quality metrics and employed adversarial training to improve performance the of deep-features.
- **Learning to See in the Dark**: *January 2021*
  - ***Digital Image Processing Course Project***: Analysis of the paper, 'Learning to See in the Dark' by *Chen et al.* (CVPR 2018). Used the implementation to learn the basics of deep learning and its implementation in Python using Tensorflow. Analyzed the trained network and solved a limitation of the existing paper.
- **Automated Locker Management System for Laundry Services**: *2018 - 19*
  - ***B.Tech. final year Project***: Created a fully automated, scalable locker system for Black Swan Dry Cleaners company. Here, the customer can drop off his/her garments in the locker and pick them up when finished, being notified by an SMS to his/her mobile phone.

Technical Skills

- **Programming Languages**: Python, MATLAB, C++
- **Deep Learning and Data Science**: PyTorch, NumPy, Pandas
- **Operating Systems**: Windows, Linux

Honors and Awards

- Recipient of Prime Minister Scholarship Scheme 2015-'19 for all four years of B.Tech.
- 0.1% Merit in Mathematics in CBSE Senior Secondary Examination