

Nithin C Babu

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RESEARCH INTERESTS

- **Visual Quality Assessment:** Machine learning methods for assessing user/AI-generated content.
- **Deep Learning:** Image or video processing
- **Computer Vision:** Feature extraction, scene understanding

EDUCATION

- **Indian Institute of Science, Bangalore** Bangalore, Karnataka
Ph. D. in Electrical Communication Engineering *October 2020 - Present*
 - Research Advisor : Dr. Rajiv Soundararajan
 - Research Topic : Visual Quality Assessment of User-Generated and AI-Generated Content
 - CGPA : 9.0/10
- **Government Engineering College, Thrissur** Thrissur, Kerala
Bachelor of Technology in Electronics and Communication Engineering *Aug 2015 - July 2019*
 - Project Advisor : Prof. Anish Babu K K
 - CGPA : 8.03/10
- **Kendriya Vidyalaya Thrissur** Thrissur, Kerala
CBSE Senior Secondary Examination *2015*
 - Steam : Computer Science
 - Percentage : 94.4%
- **Kendriya Vidyalaya Thrissur** Thrissur, Kerala
CBSE Secondary Examination; CGPA: 10/10 *2013*
 - CGPA : 10/10

RESEARCH PUBLICATIONS

- **Conference:**
 - 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
- **Journal:**
 - 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

INTERNSHIPS AND TRAINING

- **Elvicto Technologies Private Limited, Technopark, Trivandrum** Trivandrum, Kerala
Project Intern July 2018
 - **Smart Sensor Design based on LoRaWAN Technology:** 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** Calicut, Kerala
Intern June 2017 - July 2017
 - **Embedded System Design using Raspberry Pi Internship:** Completed a one-week internship in Embedded System Design and IoT on Raspberry Pi.
- **Bharat Sanchar Nigam Limited, Thrissur** Thrissur, Kerala
Industrial Trainee June 2016 - July 2016
 - **Telecom Technology Industrial Training:** Completed a two-week industrial training on 'Telecom Technology'.

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

ACADEMIC EXPERIENCE

- **Indian Institute of Science:**
 - **Main teaching assistant:** E9 241 - Digital Image Processing August 2022 - December 2022
 - * Involved in setting up and evaluating assignments.
 - * Conducted tutorials on Python / MATLAB coding.
 - **Main teaching assistant:** E9 241 - Digital Image Processing August 2023 - December 2023
 - * Involved in setting up and evaluating assignments.
 - * Conducted a special Python / MATLAB vectorization and broadcasting tutorial.

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

TEST SCORES

- Graduate Aptitude Test in Engineering (GATE) 2020 - Score 933/100 (AIR 12 in ECE)

ACADEMIC SERVICE

- **Reviewer:**
 - International Conference on Signal Processing and Communications (SPCOM), 2024
 - IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR), 2024