





Abhishek Iyer *Software Engineer, AI and Robotics*

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📍 Pittsburgh, USA 🇦🇺 Australian



EDUCATION

Carnegie Mellon University, *Masters in Robotics Systems Development* 08.2024 – 05.2026 | Pittsburgh, USA
Birla Institute of Technology and Science (BITS) Pilani,
B.E Electrical and Electronics, Major GPA: 8.51/10 08.2018 – 05.2022 | Pilani, India

PUBLICATIONS

- [1] **CoColor: Interactive Exploration of Color Designs** 
- [2] **CNN and LSTM based Ensemble Learning for Human Emotion Recognition using EEG Recordings** 
- [3] **Eformer: Edge Enhancement based Transformer for Medical Image Denoising** 
- [4] **Modelling, Simulation, and Implementation of PID controller on Quadrotors** 

PROFESSIONAL EXPERIENCE

- Indian Institute of Science (IISc)**, *Research Assistant* 11.2023 – present | Bangalore, India
Advisor: Prof. Rajiv Soundararajan 
 - Solving high-level semantic issues in AI-generated images such as conjoined limbs and disfigured faces by leveraging **vision-language models** for assessing application-specific perceptual quality.
 - Improving 3D scene understanding by researching novel view synthesis using **Neural Radiance Fields (NeRFs)**.
- Design.AI**, *Software Development Engineer*  08.2022 – 07.2023 | Espoo, Finland
 - Researched and implemented deep learning models such as Large Language Models (LLMs), Gaze Estimation models, and Convolutional Neural Network (CNN) classifiers.
 - Implemented classic techniques such as algorithms on custom Tree and Graph structures for guideline evaluation and optimization models for creative exploration.
 - Quality Assurance and regression testing against benchmark suite.
- Aalto University**, *Research Assistant* 08.2021 – 08.2022 | Espoo, Finland
Advisor: Prof. Antti Oulasvirta 
 - Researched and implemented saliency estimation deep learning models for focal object detection in a given UI.
 - Improved **Modified Median Color Quantization (MMCQ)** algorithm for extracting coherent color palette.
 - Used **Monte Carlo Tree Search (MCTS)** and Gaussian Mixed Models (GMMs) to extend the initial color palette.
- Johannes Kepler University**, *Bachelor Thesis* 07.2021 – 12.2021 | Linz, Austria
Advisors: Prof. Oliver Bimber  , Prof. Shishir Maheshwari 
 - Developed an object detection model that can perform real-time classification of humans under dense canopies.
 - Used Reed-Xiaoli Detector to identify colour changes and generate anchor boxes in only those regions to keep the model lightweight. Used **Airborne Optical Sectioning (AOS)** technique to preprocess input images.
- Computer Vision Research Society (CVRS)**, *Team Lead*  02.2021 – 12.2021 | Pilani, India
 - Our model is composed of an encoder-decoder network using transformer blocks, Sobel-Feldman operators for edge enhancement, and residual learning.
 - The architecture achieved **state-of-the-art results** on the AAPM-Mayo Clinic Low-Dose CT Ground Challenge dataset.
- AcYut Robotics Team**, *Core Member*  08.2018 – 05.2019 | Pilani, India
 - AcYut is a collegiate technical team which has represented India in autonomous humanoid robotics competitions.
 - My role focused on designing motor controllers and encoders for our in house programmable motors.
 - Research and simulation of navigation strategies for the robot.

PROJECTS

- EEG signal analysis using Machine learning**, *Worked under Dr. Shishir Maheshwari and Dr. Rishi Raj Sharma*
 - Achieved state-of-the-art performance for emotion classification on the SEED Dataset with a novel ensemble model.
- Sensor fusion techniques for manipulation of Robotic arm**, *Worked under Dr. Meetha Shenoy*
 - Implemented a genetic evolution movement algorithm to optimize throughput for multiple robotic arms in ROS.
- Marine Search and Rescue**
 - Implemented models like Faster-RCNN and Deep SORT to perform object detection and Multi-Object Tracking, respectively. Created custom dataset, dataloaders, and processing pipeline to train on local GPU.

TECHNICAL SKILLS

Languages

Python, C++, Matlab, Arduino

Tools and Frameworks

PyTorch, Tensorflow, ROS2, Gazebo, OpenCV, Numpy, Pandas, Matlab, Eagle