Aniruddha Vivek Patil

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Education

Indiana University — Aug 2019 - present (Expected May 2021)
Master of Science in Computer Science — *Bloomington, IN*

International Institute of Information Technology, Hyderabad (IIIT-H) — Aug 2015 - May 2019
Bachelor of Technology (Honors) in Computer Science and Engineering, CGPA 7.59/10 — *Hyderabad, India*

Experience

Intel — Jun 2018 - Jul 2018
Machine Learning Intern, Autonomous Driving Labs — *Bangalore, India*

- Developed and experimented with variants of the YOLO-v3 object detection pipeline to estimate the pose of vehicles in occluded scenes. (Occluded Vehicle Pose Estimation)
- Conducted and consolidated an extensive survey on joint object detection and pose estimation methods that use monocular vision.

Centre for Visual Information Technology — Jul 2017 - May 2019
Undergraduate Research Student, IIIT-H — *Hyderabad, India*

- Conducted research in the domain of advanced driver assistance systems on mobile devices.
- Presented some of the latest CNN architectures to a reading group focused on designing efficient CNNs.

Froogal — Digital Loyalty Startup — May 2017 - Jul 2017
Software Development Intern — *Hyderabad, India*

- Played a key role in the development of the Froogal app using React Native.
- The app helps establish loyalty rewards to regular customers and provides useful statistics to vendors.
- 10k+ downloads on the Google Play Store.

Skills

Languages: Python, C/C++, MATLAB, JavaScript, Java, C#, Racket, SQL, Bash
Technologies: OpenCV, PyTorch, Keras, Tensor Comprehensions, React, LaTeX, Unity, Blender, Adobe Suite

Projects

Occluded Vehicle Pose Estimation — Intel

- Experimented with YOLOv3 variants on the KITTI dataset using PyTorch.
- Variants included a combination of shallow feature extractors and inference parts of the original architecture to determine trade-offs.

A Survey on Joint Object Detection and Pose Estimation using Monocular Vision

- Survey paper consolidating existing literature on the topic from 1999 to 2018.
- Accepted to the International Joint Conference on Metallurgical and Materials Engineering. (JCMME 2018)

Data Annotation Tool — Microsoft Research India

- Developed a tool that facilitated the annotation of the HAMS proprietary driver attention dataset using React.
- Deployed and used by 20 annotators simultaneously.

Music Genre Classification

- Classification and comparison using various machine learning methods such as SVM, random forests, GMMs, K-means and MLP with Keras and Scikit-learn.

16x16 Tic-Tac-Toe Agent

- Devised heuristics for navigating the board state space.
- Implemented and optimized the min-max algorithm with alpha-beta pruning in Python.

Selected Coursework

Artificial Intelligence: Machine Learning, Statistical Methods in AI, Optimization Methods
Computer Vision: Computer Graphics, Digital Image Processing, Computer Vision
Systems: Distributed Systems, Operating Systems, Computer Architecture and Organization, Programming Language Principles, Game Design