Aniruddha Vivek Patil

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Education

Indiana University Bloomington — Expected May '21
Master of Science in Computer Science — *Bloomington, IN*

International Institute of Information Technology, Hyderabad (IIIT-H) — May '19
Bachelor of Technology in Computer Science and Engineering (Honors in Computer Vision) — *Hyderabad, India*

Experience

Intel — Jun '18 - Jul '18
Machine Learning Intern, Autonomous Driving Labs — *Bangalore, India*

- Experimented with variants of the YOLO-v3 pipeline to estimate the pose of vehicles in occluded scenes.
- Conducted an extensive survey on joint object detection and pose estimation methods that use monocular vision which was accepted to the MATEC Web of Conferences. (JCMME 2018)

Center for Visual Information Technology, IIIT-H — Jul '17 - May '19
Undergraduate Research Student — *Hyderabad, India*

- Built an Android app using Tensorflow Lite to process and analyze facial expressions and actions of drivers.
- Generated synthetic data for pose estimation of vehicles using Python scripting on Blender.

Froogal — Digital Loyalty Startup — May '17 - Jul '17
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.

International Institute of Information Technology, Hyderabad — Aug '17 - Apr '19
Teaching Assistant — *Hyderabad, India*

- Computer Vision (Spring '19, 120 students) and IT Workshop. (Fall '17, 200 students)

Projects

Distributed Tic-Tac-Toe and chatrooms

- Developed a distributed Tic-Tac-Toe game, in a client-server setup using the Java RMI protocol.
- Parallelized the game server to handle multiple games, along with a chat server for multiple clients/client groups.

Data Annotation Tool — Microsoft Research India

- Developed a portal using React and Express.js that facilitated the annotation of the HAMS proprietary driver attention dataset by multiple annotators simultaneously.

SQL Engine

- Developed an SQL engine in Python for parsing and executing SQL commands, with relevant error handling.

Bash Shell

- Bash-like shell implemented in C with features like piping, I/O redirection, background processes and signal handling.

Game Development

- Developed variations of the popular games BrickBreaker (2D) and Bloxorz (3D), incorporating physics, lighting, textures and shading using OpenGL.
- Designed and developed games in Unity, incorporating particle effects, projectile physics and collider mechanics.

Computer Vision and Machine Learning projects

- Developed an eye-region extractor from images using facial landmarks in OpenCV.
- Implemented a music genre classification system using ML techniques such as random forests, k-means, k-nearest-neighbors, neural networks, gaussian mixture models and support vector machines.
- Developed a Python application for colorizing comics automatically using various shading techniques (flood fill, stroke-preserving and pattern-shading) based on the intensity, continuity and pattern of strokes.

Technical Skills and Relevant Coursework

Programming Languages: Python, C, C++, Java, Javascript, Bash, SQL, C#, Racket
Frameworks and Libraries: React, PyTorch, Scikit-learn, OpenCV, Keras, OpenGL, Unity, Blender
Relevant Courses: Software Engineering, Software Analyisis and Design, Operating Systems, Distributed Systems, Database Systems, Data Structures, Algorithms, Principles of Programming Languages, Computer Architecture, Computer Networks, Artificial Intelligence, Computer Graphics, Digital Image Processing