

Aniruddha Vivek Patil

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Education

Indiana University Bloomington

Master of Science in Computer Science

May 2021

Bloomington, Indiana

International Institute of Information Technology

Bachelor of Technology in Computer Science and Engineering (Honors in Computer Vision)

May 2019

Hyderabad, India

Experience

Intel

Machine Learning Intern

June 2018 - July 2018

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.
- Accepted to the MATEC Web of Conferences (JCMME 2018).

Froogal - Digital Loyalty Startup

Software Development Intern

May 2018 - July 2018

Bangalore, India

- Played a crucial 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.

Center for Visual Information Technology, IIT-H

Undergraduate Research Student

July 2017 - May 2019

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.

International Institute of Information Technology, Hyderabad

Teaching Assistant

April 2017 - Apr 2019

Hyderabad, India

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

Projects

Weather Data Gateway

- Designed and developed a full-stack microservice-based gateway for providing NEXRAD weather data hosted on AWS.
- Built using Apache Kafka, MongoDB, MySQL, Spring Boot, React, Docker, and Maven.

Data Annotation Tool – Microsoft Research India

- Developed an annotation portal using React and Express for the HAMS proprietary driver attention dataset.
- This portal enabled annotation by multiple annotators simultaneously.

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.

SQL Engine

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

Bash Shell

- Implemented a Bash-like shell in C with features such as I/O redirection, background processes, and signal handling.

Game Development

- Designed and developed games in Unity, incorporating particle effects, projectile physics, and collider mechanics.
- Incorporated physics, lighting, and textures using OpenGL for popular games like BrickBreaker (2D) and Bloxorz (3D).

Computer Vision and Machine Learning projects

- 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

Programming languages: Python, C, C++, Java, Javascript, Bash, SQL, C#, Racket

Frameworks and Libraries: ReactJS, NodeJS, Apache Kafka, Spring Boot, Docker, Unity, Blender, MongoDB

Relevant Courses: Software Engineering, Software Analysis 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