


ADITYA SINGH

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EDUCATION

Georgia Institute of Technology, Atlanta, GA

Expected Graduation Date: May 2022

Bachelor of Science, Computer Science

GPA: 4.00

Concentrations: Intelligence & Theory

WORK EXPERIENCE

Queues | GT InVenture Prize Winner

August 2020 – April 2021

Backend Developer

- Built REST API in Flask to handle mass amounts of incoming Computer Vision data and queries for said data
- Hosted InfluxDB, MongoDB, and Flask web servers on a fleet of AWS EC2 Virtual Machines
- Optimized backend response times by 70% after integrating Redis in-memory caching
- Implemented JSON tokenization to securely store/authorize web users in MongoDB

T-Mobile | Marketing DevOps Team

June 2020 – August 2020

Software Engineer Intern

- Built a full-stack application to assist DevOps Engineers in monitoring/resolving big data job workflows
- Optimized the job failure resolution process for Senior Engineers by 50% by transferring their daily logging responsibilities from an Excel Spreadsheet to an internally deployed web application
- Performed live updates by regularly scanning a REST API to provide insight on the status of over 1,000 job failures stored in a PostgreSQL Database

PROJECTS / RESEARCH

GTSM - Structure from Motion Research | Frank Dellaert Lab

January 2021 - Present

- Created a dynamic point cloud visualization tool in React Three Fiber to render SfM 3D reconstructions
- Leveraged SVD to transform the orientation of the point cloud to the user's natural view
- Given camera intrinsic/extrinsic data, rendered poses of all camera frustums in relation to the point cloud itself

Autonomous Object Localization | Unitree A1 Quadruped Robotics Lab

August 2020 – May 2021

- Created a network of ROS publisher/subscriber nodes (subscribing to color and depth image topics) on a Jetson Xavier to enable A1 quadruped robot to navigate an indoor environment
- Implemented SSD-MobileNet-v2 network to generate precise bounding boxes of neighboring objects in real time
- Utilized an Intel RealSense d435i camera to estimate depths and extract the relative 3D coordinates of objects with respect to A1 robot to enable real time obstacle avoidance maneuvers

NFL Regular Season Winner Prediction Model

October 2020 – December 2020

- Web scraped 3 seasons of NFL regular season data and applied cleaning/standardization procedures
- Applied PCA to reduce the feature space by 50% while still retaining over 98% of original variance
- Experimented with supervised learning algorithms like LASSO Regression, SVM, and Random Forest to achieve roughly 80% accuracy

"ViewMarks" | Photo Sharing Mobile Application

June 2020 – July 2020

- Created (independently) a location-based photo sharing application allowing users to share aesthetic views from around the globe and rate other people's picture-based posts using React Native and Expo
- Implemented a backend REST API in Node.js to seamlessly upload mobile camera images to an AWS S3 Bucket and store post information on MongoDB

SKILLS/TOOLS

Programming Languages: Python, Java, C, SQL, JavaScript

Concepts/Coursework: Deep Learning, Computer Vision, Systems and Networks, Advanced Algorithms, Data Structures and Algorithms, Agile/Scrum, Backend Development (Self-Taught)

Frameworks/Technologies: PyTorch, ROS, Flask, AWS EC2, Git, PostgreSQL, MongoDB, InfluxDB, Redis, React