ADITYA SINGH

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EDUCATION

Georgia Institute of Technology, Atlanta, GA **Expected Graduation Date: May 2023**

BS/MS Computer Science **GPA: 4.00 / 4.00**
Concentrations: Intelligence & Theory

WORK EXPERIENCE

AWS | EC2 Security Team **May 2021 – August 2021**
Software Development Engineer Intern

- Created a multi-threaded ticketing and notification system in NodeJS to alert internal AWS teams about their EC2 VMs with outdated software libraries which require patching
- Monitored over 20,000 EC2 machines and issued production level tickets daily
- Improved overall pipeline runtime by 30% by parallelizing independent operations which processed EC2 host statuses belonging to different AWS organizations

Queues | GT InVenture Prize Winner **August 2020 – April 2021**
Backend Developer

- Built REST API in Flask to large volumes 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
- Regularly scanned REST API to provide insight on status of over 1,000 job failures stored in PostgreSQL

PROJECTS / RESEARCH

Frank Dellaert Lab | Structure from Motion Research (GTSFM) **January 2021 - Present**

- Implemented SuperPoint and SuperGlue Neural Networks to obtain accurate key point correspondences between image pairs
- Created a dynamic point cloud visualization tool in React Three Fiber to render SfM 3D reconstructions
- Leveraged SVD to transform the point cloud orientation to the user's natural view
- Given camera intrinsic/extrinsic data, rendered poses of all camera frustums in relation to the point cloud

Autonomous Object Localization | Unitree A1 Quadruped Robotics Lab **August 2020 – May 2021**

- Created a network of ROS publisher/subscriber nodes 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 nearby objects in real time
- Utilized an Intel RealSense d435i camera to estimate depths and extract relative 3D coordinates of objects with respect to A1 robot to enable real time obstacle avoidance maneuvers

SKILLS/TOOLS

Programming Languages:	Python, Java, C, SQL, JavaScript
Frameworks:	OpenCV, Pytorch, ROS, Flask, AWS EC2, DynamoDB, Git, MongoDB, InfluxDB, ReactJS
Concepts/Coursework:	Deep Learning, Machine Learning, Design and Analysis of Algorithms, Applied Combinatorics, Computer Vision (self-taught), Backend Development (self-taught)