Vivek **Mhatre**

Software Developer · Student

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Education

Georgia Institute of Technology   *Atlanta, Georgia*
Computer Science Major, Expected May 2022   *August. 2019 - Present*
- Specializing in Systems & Architecture and Intelligence · GPA: 3.88

Experience

Georgia Tech Research Institute   *Atlanta, Georgia*
Research Intern   *May 2020 - July 2020*
- Researched and developed various custom machine learning models using Keras to accurately characterize blast waves generated by explosive charges with ~96% accuracy.
- Parsed, organized, and prepared over seven years of collected sensor readings using Pandas and Numpy to model blast waves.
- Utilized signal processing methods to extract features from sensor data to improve the characterization of blast waves by ~10%.

Rutgers University   *New Brunswick, New Jersey*
Research Assistant   *May 2019 - August 2019*
- Responsible for designing a new database entry system to track hundreds of past and ongoing experiments.
- Conducted research in the Hybrid Micro/Nanomanufacturing Laboratory developing ionic thrusters for spacecraft propulsion.
- Investigated fabrication for wafer-scale arrays of hierarchical micro/nanostructures via laser lithography using a Class 4 laser.

MobileArq   *Summit, New Jersey*
Database Programmer   *Oct. 2014 - Sept. 2018*
- Maintained highly secure MySQL databases for large school districts consisting of 40,000 families.
- Built and maintained secure websites for various NJ organizations using a LAMP Stack and WordPress.
- Designed mockups and wireframes for a mobile application to assess performance of medical residents at Columbia University.

Extracurricular Activities

Robojackets Robonav
Robotics Engineer
- Collaborate with team members to write code for a 200+ lb robot autonomously navigating rough terrain.
- Used OpenCV and YOLO to implement a low latency line detection algorithm able to identify lane lines and barrels in ~30ms.
- Learned and implemented basic 3D LiDAR mapping, path planning, and computer vision systems with ROS and C++.
- Contributed to codebase with over 30,000 lines of code and utilized CI/CD workflow.

Automotive Lidar Vertically Integrated Project
Simulation Subteam
- Developing a scanning 2D LiDAR system mounted on an RC vehicle to enable point-to-point autonomous navigation, with collision avoidance using ROS, Python, and C++.
- Doubled the capabilities of existing gazebo simulations to test the robustness of our algorithms and eliminate bugs.

Projects
Hackathons and More
- Too Long Didn't Listen (TL:DL): Built a transcription tool during HackGT 2019 to convert an mp3 file into summarized text, highlighting keywords and linking selected phrases. Used Django and a combination of Microsoft Azure and Google Cloud.
- Soap AI: Created a voice assistant during HackNYU 2018 to recognize toxic language and depression using machine learning.
- Created a Fantasy Premier League tool to predict player performances using machine learning. Placed in top 5% of all players.
- Developed a basic aimbot in Counter-Strike: Global Offensive using C and x86 Assembly.
- Worked on hands-on security projects for mitigating against SQL injection, cross site scripting, and ensuring least privilege access as part of Greyhat Cybersecurity Club.

Skills

Technologies	TensorFlow, Keras, Scikit-Learn, Jupyter, Pandas, Numpy, LAMP stack, MySQL, Django
Programming Languages	Python, C++, R, Java, Javascript, MATLAB, LaTeX