UMANG RASTOGI

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EDUCATION

University of Maryland, College Park

GPA - 3.78/4.0

M.Eng. Robotics

Aug 2019 - May 2021

Manipal Institute of Technology, Manipal, India

GPA - 3.48/4.0

B.Tech. Electronics and Communication Engineering

July 2015 - June 2019

• Semester Abroad at Ecole Spéciale de Mécanique et d'Electricité (ESME Sudria)

Rank - 2/50

WORK EXPERIENCE

Digital Dream Labs Pittsburgh, PA

Software Developer Intern

Dec 2020 - Present

• Initiated the process to make the robots compatible with the latest software Software Developer Intern

June - Aug 2020

• Optimized the data transfer process for Vector and Cozmo by achieving 50% improvement in transfer speed

Accelerated the onboarding time of new hires by 90% by documenting the build process of the Cozmo robot

University of Maryland

College Park, MD

Graduate Teaching Assistant – Software Development for Robotics

Aug – Dec 2020

- Designed a system to clarify the queries of students, thereby improving clarification time by 75%
- Taught software development cycles and robotics open-source software such as Gazebo to graduate students

TIF Labs Bengaluru, India

Embedded Systems Intern

Jan - June 2019

- Revamped the component testing system increasing efficiency by 66%
- Improved average latency of data transfer by 90% using the ESP-Now protocol
- Authored content for 3 blogs and various kit-manuals to demonstrate usage of DIY electronics

PROJECTS

Connect Me If You Can | GitHub

Apr - June 2020

- Increased performance by 40% by solving the huge state space problem using a deep Q-learning network
- Employed 3 self-learning methods to train the AI player against various agents such as a minimax agent
- Modeled a graphical user interface using the Python Pygame library to run the Connect-4 game

Dynamic Path Planner | GitHub

Feb - Apr 2020

- Optimized search algorithm to reduce exploration and pathfinding time by 99%
- Collaborated with a 3-member team of cross-functional backgrounds to cover all parts of the project
- Constructed a custom environment in ROS-Gazebo to test the algorithm in non-static conditions

Supermarket Cleaning Robot | GitHub

Oct - Dec 2019

- Ensured quality by employing test-driven development to gain a code coverage of 92%
- Managed a 4-member team by proper division and distribution of tasks among them
- Simulated object detection and collection using ROS Kinetic and Gazebo on the Turtlebot

Self-Balancing Robot

May – Sept 2017

- Coordinated a team of 5 members to build a 2-wheeled self-balancing robot
- Developed a control algorithm using LQR controller via MATLAB Simulink

SKILLS

Programming languages: Python, C++

Software Development: Version Control, Agile Development, Unit Testing, Google Mock/Test Framework

Software: ROS, Visual Studio Code, PyCharm, Git, MATLAB

Operating Systems: Windows, Linux

ACTIVITIES

A. James Clark College of Engineering, Graduate Student Senator Engineering Graduate Student Society, Robotics Representative Project MANAS, Sensor Division Head

Nov 2020 – Present Aug 2020 – Present Feb 2016 – Sept 2017