UMANG RASTOGI

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3409 Tulane Drive, Hyattsville, MD 20783

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 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* — *Nov 2020 – Present*
Engineering Graduate Student Society, *Robotics Representative* — *Aug 2020 – Present*
Project MANAS, *Sensor Division Head* — *Feb 2016 – Sept 2017*