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 *Expected May 2021*
- Graduate Teaching Assistant for ENPM808X - Software Development for Robotics

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)

WORK EXPERIENCE

Digital Dream Labs **College Park, MD**
Intern – Software Developer *June – Sept 2020*
- Remodeled the user interface of the Cozmo app to enhance the user experience from start to end
- Documented the build process and the initial onboarding process for the Cozmo robot

TIF Labs **Bengaluru, India**
Intern – Embedded Systems *Jan - June 2019*
- Revamped the component testing system increasing efficiency by 66%
- Developed the firmware for the embedded platform involved in a project called FitGa
- Generated technical content for blogs and video posts to explicit out of the box usage of electronics

PROJECTS

Connect-4 If You Can | GitHub **College Park, MD**
Project – Robot Learning *May – June 2020*
- Solved the huge state space problem of the Connect-4 game by using a DQN network to train the AI player improving its performance by 40%
- Employed self-learning for the computer player training it against various agents such as a minimax agent
- Modeled a graphical user interface using the Python Pygame library to run the Connect-4 game

A-star Turtlebot | GitHub **College Park, MD**
Project – Planning for Autonomous Robots *Mar – Apr 2020*
- Applied a-star search to find the goal and used back-tracking to get an optimal path for the Turtlebot
- Demonstrated the exploration and optimal path from start to destination using ROS on Gazebo
- Optimized search algorithm to reduce exploration and pathfinding time by 99%

Supermarket Cleaning Robot | GitHub **College Park, MD**
Final Project – Software Development for Robotics *Oct - Dec 2019*
- Ensured quality by employing test-driven development to gain a code coverage of 92%
- Simulated object detection using ROS Kinetic and Gazebo on the Turtlebot
- Developed the firmware to simulate detection and collection of objects in a supermarket

Self-Balancing Robot **Manipal, India**
Sensing Head – Project MANAS, AI Robotics Team *May – Sept 2017*
- Managed a team of 5 students to build a self-balancing robot based on two wheels that would maintain its upright position when left unattended
- 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, Microsoft Office
- **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*