

# UMANG RASTOGI

(240) 840-0727 | [Email](#) | [Website](#) | [LinkedIn](#) | [GitHub](#)  
3409 Tulane Drive, Hyattsville, MD 20783

## EDUCATION

**University of Maryland, College Park**  
*M.Eng. Robotics*

**GPA – 3.78/4.0**  
*Aug 2019 - May 2021*

**Manipal Institute of Technology, Manipal, India**  
*B.Tech. Electronics and Communication Engineering*

**GPA – 3.48/4.0**  
*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**

*Intern – Software Developer*

*Dec 2020 – Present*

- Asserted the need to make the robots compatible with latest software

*Intern – Software Developer*

*June – Aug 2020*

- Optimized the data transfer process for Vector and Cozmo by 50%
- Accelerated the onboarding of 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 an efficient system to clarify the queries of students and improving clarification time by 75%
- Taught the students about software development cycles and robotics open-source software such Gazebo

**TIF Labs**

**Bengaluru, India**

*Intern – Embedded Systems*

*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 technical content for 3 blogs and a manual to explicit 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-team member 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, Microsoft Office

**Operating Systems:** Windows, Linux

## ACTIVITIES

**A. James Clark College of Engineering, Graduate Student Senator**  
**Engineering Graduate Student Society, Robotics Representative**

*Nov 2020 – Present*  
*Aug 2020 – Present*