Medha Patil

Robotics Engineer
Philadelphia, PA
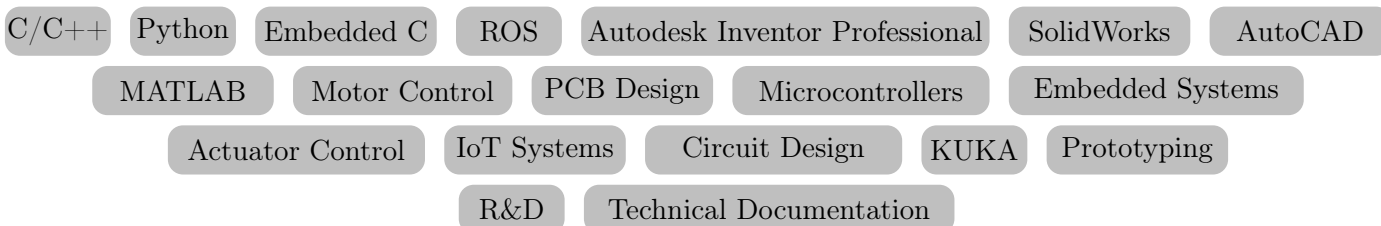https://www.linkedin.com/in/medha-patil/

📞 2676659737
✉ mjp482@drexel.edu
✉ medha1022@gmail.com

SUMMARY

Robotics Engineer with 3+ years of cumulative experience in embedded systems, robotic modeling, and intelligent automation. Skilled in C/C++, MATLAB, ROS, and microcontroller integration. Experienced in 3D CAD modeling using SolidWorks and Inventor for electromechanical components and enclosures. Published researcher with hands-on work in SLAM, IoT systems, and autonomous navigation. Adept at bridging hardware-software development through simulation-driven design and mentoring teams in academic and applied R&D environments.

SKILLS

C/C++ Python Embedded C ROS Autodesk Inventor Professional SolidWorks AutoCAD MATLAB Motor Control PCB Design Microcontrollers Embedded Systems Actuator Control IoT Systems Circuit Design KUKA Prototyping R&D Technical Documentation

EXPERIENCE

•Teaching Assistant   *Sept. 2024 - Mar. 2025*

Drexel University College of Engineering

- Graphical Communication: Provide support in teaching visual design, CAD, and engineering drawing principles to undergraduate students (Jan. 2025 – Mar. 2025)
- Introduction to Programming for Embedded Systems: Guide students in embedded systems programming using C/C++, focusing on microcontrollers and hardware integration (Jan. 2025 – Mar. 2025)
- Senior Design: Assist Senior Design Supervisor in course planning, project evaluation, and mentoring teams on robotics and automation projects (Feb. 2024 - June 2024) (Jan. 2025 – Mar. 2025)
- Fluid Systems: Provide guidance and support to engineering students during fluid system labs and coursework (Sept. 2024 - Dec. 2024)
- Renewable Energy: Assist students during renewable energy electrical labs (Sept. 2024 - Dec. 2024)

•Intern Software Engineer   *June 2024 - Dec. 2024*

Raptor Robotics

- Co-developed automated navigation system for landmine detection robot (Trojan)
- Enhanced driving mechanisms to improve performance and reliability

•Graduate Research Assistant   *May 2024 - Sept. 2024*

Drexel University College of Engineering

- Conduct research in Industrial Robotics and Internet of Things
- Perform research relating to Intelligent Manufacturing, Digital Manufacturing experiments

•Embedded Systems Intern   *Apr. 2022 - Aug. 2023*

H3 Sciences

- Devised designs and developed smart, energy-efficient products for off-grid and on-grid scenarios, optimizing manufacturing costs
- Implemented protocol to conduct home scanning and 3D imaging of residential buildings
- Utilized AutoCAD to create CAD designs and designed electronic circuits

•Jr. Robotics Engineer - SW/HW (Intern)   *Oct. 2021 - Mar. 2022*

GTQ Defence Systems

- Conducted research and development and designed mechanisms for defence robots and drones
- Facilitated process to explore advanced processors including Raspberry Pi and NVIDIA Jetson Nano
- Researched Military Drone Systems, with focus on swarm technology

EDUCATION

•**Master of Science - Robotics and Autonomy**   *2023-25*

Drexel University College of Engineering, Philadelphia, PA, USA
Dean's Fellowship Recipient

•**Bachelor of Engineering - Electronics and Telecommunication Engineering**   *2019-23*

Modern Education Society's College of Engineering, Pune, MH, India

PROJECTS

- Electronics for Real Time Fall Prediction: Jan. 2025 - Mar. 2025
- Educational Automated Manufacturing Cobot Work Cell: Jul 2024
- Optimal Path Planning using Particle Swarm Optimization: Dec 2023
- Hector Slam Mapping and Indoor Positioning ROBOT with ROS and Lidar: June 2022 - June 2023
- Smart Water Management System using IoT Technology: March 2022
- 6DOF Robotic Arm: Jan 2022
- Flipkart GriD 3.0 Robotics Challenge: June 2021 - Sept 2021
- RoboCon 2021: Sept 2020 - Aug 2021
- Smart Gate Entry Control System for Residential Buildings: Mar 2021 - Jun 2021

PUBLICATIONS

•**Hector SLAM Mapping and Localization System using ROS and LIDAR**   *Jan. 2024*

Scopus Indexed, Grenze International Journal of Engineering and Technology
https://thegrenze.com/index.php?display=page&view=journalabstract&absid=2180&id=8

•**Smart Water Management using IoT Technology**   *May 2022*

EasyChair
https://easychair.org/publications/preprint/hBfV

LEADERSHIP & ACTIVITIES

- Captain of RoboCon Team MESCOE: Aug 2020 - April 2022
- Chairman of Roboclub MESCOE: Jan 2022 - Aug 2022
- Techno-Genesis 2022, International Level Project Exhibition: April 2022
- Organized Robotics Workshop: April 2022
- Conducted introductory session on KUKA robots: Feb 2022
- Trainee at KUKA India Private Limited Pune: Sept 2021
- Documentation Head at Roboclub MESCOE: 2020 - 2021
- Member at Google Developers Students Club MESCOE: 2020 - 2021
- Dynamic Training Model United Nations: Dec 2017

HONORS AND AWARDS

- Best Paper Award: "SLAM and ROS based Warehouse Robot System" (9th National Conference on Advancements in Communication, Computing and Electronics Technology): April 2023
- RoboCon Finalist: Aug 2021
- Swadeshi Microprocessor Challenge 2020 Quarter Finalist: July 2021
- Second Position in National Student Colloquium on "Light for Life" Event Presentation on Photonics conducted by Government College Autonomous, Rajahmundry, Andhra Pradesh, INDIA in association with UNESCO-IDL-2020 and Luminescence Society of INDIA: May 2020
- First Position in Information Technology Exhibition for web development: Dec 2017