

## YASH SONI

Robotics Engineer | [Robotics Portfolio](#) | +1(585) 397-6492 | [soni.yash.official@gmail.com](mailto:soni.yash.official@gmail.com) | [www.linkedin.com/in/yash-soni-1838361ba/](https://www.linkedin.com/in/yash-soni-1838361ba/)

### TECHNICAL SKILLS

- **Software & Tools:** Autodesk AutoCAD, Inventor, Fusion360, Proteus, ROS1/ROS2, SolidWorks, SQL, URScript, URCaps, MATLAB, Gazebo, Rviz, OpenCV, Microsoft Excel, Word, PowerPoint, Google Cloud, AWS, LabVIEW
- **Testing & Debugging:** Oscilloscopes, Spectrum Analyzers, Multimeters, Sensors, Control Systems Analysis
- **Microcontrollers & Development Boards:** Arduino, Raspberry Pi, NodeMCU, PLC Programming
- **Programming Languages:** Python, C++, Java, Go, C, JavaScript (React JS, Node JS, Angular)
- **Operating Systems:** Windows, Linux, MacOS
- **Project Management & Quality Control:** Version Control Systems, Agile Methodologies, Six Sigma, FMEA, SPC
- **Specialized Skills:** Motion Planning & Path Optimization, Machine Learning for Robotics, Digital Twin Simulations, Kinematics & Dynamics, Sensor Fusion, Control Algorithms, Human-Robot Interaction (HRI)

### PROJECTS

- **MS Thesis – Within-a-Beat Vascular Resistance Control in a Mock Circulatory Loop (NIH-funded project, 2024 – Ongoing)**
  - Enhancing simulation performance and accuracy for cardiovascular simulators.
  - Designed an adaptive resistance control algorithm to respond within a heartbeat timeframe.
  - Improved simulation realism for medical testing, making it more effective for VAD development.
- **Zone-Following Roverbot using SLAM & DATMO (2024)**
  - Designed an autonomous rover using SLAM and DATMO for real-time mapping and object tracking.
  - Created a fully functional prototype capable of autonomously navigating and tracking moving objects.
- **Trajectory Planning & Object Grasping on Universal Robots (2023)**
  - Developed and tested grasping and trajectory algorithms on UR collaborative robots.
  - Increased accuracy and efficiency in robotic object manipulation.
- **Smart Lab (2022)**
  - Built a web-based interface that enables remote experiment control and precise data collection.
  - Minimized human error and enhanced data accuracy in lab experiments.
- **Weather Balloon with Payload Tracking (2021)**
  - Designed an IoT-based GPS tracking system that transmitted data via a cellular network.
  - Enabled real-time environmental monitoring for research purposes.
- **Customized Drone for Flag Hoisting (2021)**
  - Engineered a drone with a personalized flag deployment mechanism.
  - Successfully executed automated flag hoisting in mid-air, demonstrating a novel use case for drones.
- **All India Rank 16/100 – ABU ROBOCON 2021**
  - Designed and manufactured a high-performance robot pair for competition tasks.
  - Achieved All India Rank 16 out of 100 teams, showcasing engineering excellence.

### PROFESSIONAL EXPERIENCE

#### Graduate Research Assistant

Kate Gleason College of Engineering, Rochester, NY | January 2025 - Present

- Developing a novel non-invasive monitoring system for Ventricular Assist Devices (VADs) to assess pump performance and predict patient health status.
- Designing an advanced signal processing unit to enable real-time adjustments and predictive modeling.
- Optimizing real-time data analysis algorithms, improving prediction accuracy by 25% in forward modeling applications.
- Enhancing early detection of complications, reducing reliance on invasive procedures, and improving patient outcomes.

#### Software Engineer

Searce Co-Sourcing Pvt. Ltd., India | January 2022 – July 2024

- Developed and deployed scalable cloud-based applications, reducing system downtime by 30% and improving operational efficiency.
- Designed and implemented deployment tools, enhancing efficiency and reducing deployment time by 40%.
- Collaborated with software, data engineering, and cloud operations teams to optimize cloud solutions.
- Contributed to a top 3 ranked software delivery team in the APAC region and improved cloud expense tracking by 50%.

#### Key Projects:

- **Cloudmon**
  - Developed a Cloud FinOps tool for real-time cost tracking.
  - Implemented a React JS-based UI and Python (Flask) backend integrated with BigQuery and Firebase.
  - Reduced technical effort in expense tracking by 50%, improving financial transparency.
- **SaaS Accelerator**
  - Created a full-stack SaaS accelerator for the seamless deployment and monitoring of applications.
  - Built a robust platform using React JS, Firebase Firestore, and GKE.
  - Enabled seamless application deployment and monitoring, boosting operational efficiency.

### EDUCATION

- **Rochester Institute of Technology, Rochester, NY**  
Masters of Science in Mechanical Engineering with Robotics, Fall Sept 2024 -GPA 3.89
- **MESWCOE, University of Pune India**  
Bachelor of Engineering – Mechanical Engineering, Aug 2022