

Rohan Singh

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EDUCATION

Carnegie Mellon University

Master of Science Artificial Intelligence Engineering

Pittsburgh, PA

May 2026

Texas A&M University

Bachelor of Science Mechanical Engineering

College Station, TX

December 2023

WORK EXPERIENCE

Toyota Motors North America

Software Systems Engineer I

Plano, TX

August 2023 – October 2024

- Developed and maintained software applications for in-vehicle infotainment systems, delivering features such as navigation, entertainment, and connectivity.
- Led integration efforts by executing tracing and logging, ensuring seamless communication between vehicle components such as sensors and telematics modules, increasing system reliability by 30%.
- Conducted system-level testing and troubleshooting through observability services for cloud-scale applications, improving software quality and reducing production delays, achieving a 25% reduction in production delays.
- Utilized programming languages such as C/C++ and Python and worked with RTOS such as AUTOSAR.

Tesla

Austin, TX

Software Engineer Intern

May 2023 – August 2023

- Automated Revit model extraction, reducing manual task time from 12 hours to 5 minutes and increasing workflow efficiency by over 99%.
- Built a robust, user-friendly tool featuring automatic synchronization, error logging, persistent background jobs, and a custom frontend with real-time status updates on the Revit extraction tool, boosting accessibility and transparency for 50 internal users daily.
- Employed alternative to Autodesk Forge Flex tokens for cost-effective operation resulting in savings of \$491,400 annually with scalable operations.
- Facilitated development of a real-time tracking service using Go and 5G capabilities for monitoring assets such as AGVs, cranes, vehicles to improve operational efficiency and asset management.
- Rendered 3D data visualizations using React, Python, and WebGL for operational insights from 1TB+ of sensor and spatial data per week, assisting teams in faster decision making.

Tesla

Austin, TX

Software Engineer Intern

January 2022 – September 2022

- Implemented a project tracking system managing over 30,000+ scopes worth over \$300 million across Texas Giga Factory, dealing with labor, reports spending, forecasts for funding, and has project controls in place to identify work at risk.
- Created dashboards, reports, and tools providing real-time visibility into 150+ project KPIs, reducing reporting delays by 50% and improving management decision speed.
- Collaborated with the Texas Giga Factory BIM team responsible for managing the digital models and data representations of factories and its production assets used by engineering, construction, manufacturing, and operations teams.
- Handled LIDAR scanning and reality capture to offer design and construction coordination services aimed at maximizing constructability, safety, maintainability, and future factory expansion options.

RESEARCH EXPERIENCE

Machine Learning Research (Dr. Iman Borazjani)

College Station, TX

Research Assistant

August 2023 – December 2023

- Conducted research on machine learning techniques applied to echocardiography segmentation, focusing on identifying critical cardiac structures such as mitral and aortic valves, left atrium, and left ventricle walls.
- Performed comprehensive image preprocessing techniques, including normalization, noise reduction, and contrast enhancement, increasing the model's robustness to low-quality echocardiograms by 25%.
- Leveraged transfer learning on pre-trained models, reducing training time by 60% while maintaining high validation accuracy across a dataset of over 10,000 labeled images.

Carnegie Mellon University Robotics Institute

Pittsburgh, PA

Graduate Research Assistant

September 2024 – Present

- Researched visuomotor policy learning via action diffusion, using point clouds, depth maps, and images for robotic control.
- Developed advanced multi-agent coordination leveraging LLMs for task-specific interactions, enabling seamless data exchange and cooperative decision-making among robotic agents.
- Employing Unity, Isaac Sim, and Gazebo (ROS2) to train robots for object manipulation, path planning, and obstacle avoidance in URDF-based simulations.

SKILLS

Programming Languages: Python, Typescript, C#, Go, C/C++

Application Software: SolidWorks, Autodesk Inventor, Autodesk Fusion 360, Autodesk Revit, CATIA, Creo, MATLAB