AMAN MANISH CHULAWALA

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EDUCATION

Carnegie Mellon University May 2024
Master of Science in Mechanical Engineering | GPA: 4.0/4.0 *Pittsburgh, PA*
Relevant Coursework: Optimal Control, Reinforcement Learning, Mechatronics Design, Computer Vision, Control Theory

University of Mumbai May 2022
Bachelor of Engineering in Mechanical Engineering | GPA: 9.81/10.0 *Mumbai, India*
Relevant Coursework: Production Engineering, Linear Controls, Quality Engineering, Machine Design, Material Science

PROFESSIONAL EXPERIENCE

Robotic Systems Engineering Intern May 2023 – Aug 2023
Neocis *Miami, FL*

- Led the design and implementation of specialized testing station with a robust software architecture for quality control tests on candidate joints in the next-generation Yomi Dental Robot, following industrial CAD and GD&T norms.
- Conducted comprehensive data analysis and root cause analysis to ensure robust performance evaluation of joint actuators, helping identify trends to anticipate and prevent sub-par components from being added to products.

CAD and Product Design Intern Aug 2021 – Oct 2021
RoboSlog *New Delhi, India*

- Crafted and refined intricate designs for an IoT module's locking mechanism, guiding its transition from concept to functional prototype and eventual product launch.
- Orchestrated meticulous testing and validation processes to seamlessly integrate software and hardware components, culminating in the delivery of a dependable and high-quality end product.

TECHNICAL SKILLS

Software: ROS, Simulink, SolidWorks, Gazebo, Blender, ANSYS Mechanical, Altair HyperWorks, Autodesk Inventor
Programming: Python, C, C++, CMake, MATLAB, Java, Julia, SQL
Tools: CUDA, OpenAI Gym, PyTorch, TensorFlow, OpenCV, NumPy, PCL, Linux Terminal, Git, Docker, PLC
Embedded Development: Nvidia Jetson, Raspberry Pi, Adafruit Circuit Python Boards, Arduino

RESEARCH AND SELECTED ACADEMIC PROJECTS

Robotic Metrology for Additively Manufactured Parts Sept 2022 – Present
Individual Research Thesis | Dr. Kenji Shimada | CERLAB

- Created and implemented a Pose Estimation and Quality Evaluation Metric within a Robotic Metrology Pipeline funded by NASA for precision and quality analysis of manufactured parts in high-stakes applications.
- Developed novel contributions to model-based coverage viewpoint generation problem for recreating the surface texture of objects for quality analysis using traditional optimization techniques and reinforcement learning.

Augmented Conflict Based Search for Lifelong Agent Planning Sept 2023 – Dec 2023
Group Project | Dr. Maxim Likhachev | Planning and Decision Making in Robotics

- Engineered an optimized variant of the Conflict Based Search algorithm tailored for multi-agent robot planning scenarios, resulting in a 10% reduction in planning time and a significant expansion of feasible agent deployment.
- Implemented the enhanced algorithm in various test warehouse environments provided by Amazon Robotics, achieving a benchmark score of nearly 3000 tasks completed by 25 agents within a timeframe of 5000 seconds.

Assistive Robot for Operations on Cargo Ships Jan 2023 – May 2023
Group Project | Dr. Cameron Riviere and Dr. Zeynep Temel | Mechatronics Design

- Led the prototyping and deployment of a robust perception pipeline, integrating it will the overall robot control system, ensuring functional autonomy and telemetry capabilities.
- Applied expertise in failure analysis and root cause analysis methodologies to identify and resolve issues, ensuring optimal functionality and reliability of robotic systems.