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: Mechatronics, Dynamics of Machines, Industrial Electronics, Linear Control Systems

PROFESSIONAL EXPERIENCE

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

- Engineered a comprehensive testing program for joint actuators, a critical component of the second-generation Yomi Dental Robot, ensuring rigorous evaluation of performance specifications at the component level.
- Established and designed specialized testing stations, implementing a robust software architecture to facilitate diverse quality control tests for a wide range of candidate joints, contributing to enhanced efficiency in the testing process.

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

- Conceptualized and presented a design proposal for the locking mechanism in an IoT-based module and translated the design into a functional prototype, contributing to the deployment of a well-received product.
- Spearheaded the implementation of rigorous testing and validation protocols, ensuring the seamless integration of software and hardware components in the final iteration, delivering a reliable and high-quality 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
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

- Developing a new statistic-based feature descriptor for dense point clouds which allows for pose estimation and pose correction of objects being scanned to minimize alignment error during metrology inspections.
- Working on the model segmentation using the voxel cloud connectivity segmentation algorithm to divide the model into individual segmentation for scanning with the MicroEpsion laser profiler.

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

- Developed a streamlined variant for the Conflict Based Search algorithm for multi agent robot planning scenarios which reduced planning time by 10% and double the scope of viable agents that can be employed.
- Applied the augmented algorithm to a series of test warehouse environments provided by Amazon Robotics and benchmarked a score of nearly 3000 tasks completed by 25 agents in 5000 seconds.

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

- Prototyped and deployed the perception pipeline which included vision-based control for 5 DOF robotic manipulator and high-level classification of areas of interest in the environment.
- Worked on overall system integration and development of the remote telemetry system to monitor the performance of the robot out in the field and provide real time updates to the planning architecture.