J A Y S T O N A R L E N M E N E Z E S

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EDUCATION

Northeastern University **Boston, MA**
Master of Science in Mechanical Engineering, Concentration: Mechatronics *Expected Dec. 2023*
Relevant Coursework: Mechatronics Systems, Robot Mechanics & Control, Control Systems

Mumbai University **Mumbai, India**
Bachelor of Science in Mechanical Engineering *June 2021*

SKILLS

- **CAD Packages**: AutoCAD, Autodesk Inventor, Autodesk Fusion 360.
- **Programming Skills**: C, MATLAB, GNU Octave, Arduino, Python, HTML, CSS, JavaScript, XML, MySQL.
- **Simulation Software**: ANSYS (Mechanical APDL and Workbench), SolidWorks.
- **Documentation Tools:** MS Word, MS Excel, MS PowerPoint, MS OneNote.
- **Libraries:** NumPy, SciPy, TensorFlow, Pandas, PyQt5, Matplotlib, OpenCV.

EXPERIENCE

Northeastern University **Boston, MA**
Graduate Researcher *May 2022 - Present*

- Research about developing a Virtual Neuromuscular Controller for commanding torque for assistive walking using exoboots and Python.
- Innovated Python scripts to read, resample and filter treadmill data to sync with exoskeleton data.
- Structured a simulation code for offline testing with past data to replicate actual functioning.
- Conducting ongoing gait study experiments with test subjects using exoboots, mocap and treadmill setup.
- Created a machine learning model for predicting subject/treadmill speed, given IMU data.

Larsen & Toubro Hydrocarbon Engineering **Mumbai, India**
Mechanical Engineering Intern *July 2021 - Sept 2021*

- Analyzed functional details of EPCI of offshore sites in the Oil & Gas industry.
- Demonstrated a case study on the working of Sump Caisson and recent advancements for improved design.

Bharat Petroleum Corporation Limited **Mumbai, India**
Mechanical Engineering Intern *June 2019 - July 2019*

- Explored different types of pumps used in an oil and gas refinery such as Submersible Pumps and Screw Pumps.
- Completed a technical study on maintenance operations of Submersible Sump Pumps.
- Gained firsthand experience of the operations by using the CNC machine at the refinery's Engineering Workshop.

PROJECTS

Simulation of Stochastic Scheduling in Job Shop Final Project (ORESTA Journal) **July 2020 - June 2021**

- Developed 4 scheduling simulation environments to operate under different natures of scheduling using Python.
- Modified simulation environment to suit the requirements of R. D. Engineering Co., a pipe fittings, flanges, and sockets manufacturing company, providing 100% accuracy and results in seconds.
- Oversaw and assigned tasks to 5 students and coordinated with project supervisor throughout the project period.

Application Software for Design of Hoisting Mechanism **May 2021**

- Established software for designing and analyzing stresses of all components in a hoisting mechanism.
- Implemented algorithm removes constraints on the range of material selection, modifies dimensions to avoid failure and provides the specification of standard components.
- Developed more application software for designing systems to assist the advisor in grading and evaluation process.

Temperature Controller Unit inside a Closed Container **March 2020**

- Designed a self-reliant control unit, with heating and cooling components, to maintain the range of temperature.
- Optimized control unit by integrating a PID controller for accuracy in temperature measurement, using MATLAB.
- Led a team of 4 students in building, assembling, operating, and documenting the project tasks.

ACTIVITIES

Indian Society of Heating, Refrigerating and Air Conditioning Engineering **Mumbai, India**
Institute Chapter President *Sept 2019 - March 2020*

- Organized Technical Talk for Students by industrialist professionals providing exposure to industrial challenges.
- Assisted in Organizing Flagship Event for 400+ college students across 12 colleges.