Manny Lazalde

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EDUCATION

Carnegie Mellon University — Pittsburgh, PA
Master of Science in Mechanical Engineering — May 2021
Selected Coursework: Optimization, Machine Learning, Deep Learning

University of California, Berkeley — Berkeley, CA
Bachelor of Science in Mechanical Engineering — December 2019
Minor in Electrical Engineering and Computer Science
Selected Coursework: Data Structures, Feedback Controls Systems

SKILLS

Software: Python, MATLAB/Simulink, SolidWorks, Ansys, LabVIEW, Arduino, ROS, Linux, C++, SQL, Power BI
Python Libraries: Numpy, SciPy, Pandas, Scikit-Learn, Keras, TensorFlow, PyTorch
Hardware: Oscilloscope/Signal Generator/DAQ experience, 3D Printing, Laser cutting, UC Berkeley Machine Shop Trained

WORK EXPERIENCE

General Motors — Milford, MI
NextGen Controls Design Engineer - Vehicle Motion Embedded Controls — August 2022 - Present
- Applying Next Generation Controls techniques including machine learning and model predictive control to vehicle control algorithms for future vehicles

Data Analyst - Vehicle Motion Embedded Controls — February 2022 - July 2022
- Automated and expanded existing Agile Data Analytics dashboards through new SQL queries and Power BI updates
- Performed exploratory investigation into Power BI timeline capabilities, culminating in use of novel technology for visualization of vehicle program timelines.

System Safety Engineer - Engine Controls — June 2021 - February 2022
- Created system-based model for MY24 BEV Driver Arbitration System within Ansys Medini to modernize and replace existing document-based safety case
- Supported validation activities for engine controllers involving testing, updating tools, and hosting design reviews

Lam Research — Fremont, CA - Remote
Hardware Engineering Intern — April 2020 - August 2020
- Validated hardware design changes in semiconductor deposition equipment using Python and statistical testing, leading to customer hardware changes allowing for more efficient manufacturing processes
- Implemented flexible feature extraction pipeline and machine learning models to classify pneumatic valve events and predict valve response times from sensors, proving feasibility for adoption on new platform

General Motors — Milford, MI
Engineering Intern - Diesel Engine Calibration — June 2019 - August 2019
- Performed CARB regulated J1699 and J1979 testing, fixing software issues to avoid vehicle recalls
- Created engine diagnostic form verification tool with Python, moving monthly 30-hour process to 15 minutes

ACADEMIC RESEARCH AND PROJECTS

Carnegie Mellon University — Pittsburgh, PA
Deep Learning Final Project — February 2021 – May 2021
- Creating custom LSTM and CNN in PyTorch to predict walking gait kinematics and kinetics from IMU's. Merging with Optimal Control model in MATLAB to create more accurate regression model for the time series data

Machine Learning Final Project — August 2020 - December 2020
- Classified shoulder implants from x-rays using ResNet and VGG-16 convolutional neural networks coded from scratch in TensorFlow with a 99% classification accuracy

Gu Research Group — Berkeley, CA
Undergraduate Researcher — August 2018 - December 2019
- Modeled shark skin denticles in SolidWorks and optimized denticle geometry with Ansys Fluent CFD simulations to reduce drag on future biomimetic-based systems; J Ott, M Lazalde, GX Gu, Bioinspiration and Biomimetics (2019)

EXTRACURRICULAR ACTIVITIES

GM TRACK Diversity, Equity, & Inclusion Board – *Overall Co-Lead* — June 2021 - Present
- Spearheaded team of 10 to create company-wide DEI cookbook and received recognition from C Suite Executives
- Leading team of 30 to create DEI events and initiatives for 700+ engineers in GM early career rotational program