# Manny Lazalde

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## EDUCATION

**Carnegie Mellon University** — Pittsburgh, PA
Master of Science in Mechanical Engineering — May 2021

**University of California, Berkeley** — Berkeley, CA
Bachelor of Science in Mechanical Engineering — December 2019
Minor in Electrical Engineering and Computer Science

## SKILLS

**Software:** Python, MATLAB/Simulink, C, Java, SolidWorks, LabVIEW, SQL, Power BI, Jira, ROS, Linux, ETAS INCA
**Python Libraries:** Numpy, SciPy, Pandas, Matplotlib, Scikit-Learn, Keras, TensorFlow, PyTorch

## WORK EXPERIENCE

**General Motors** — Milford, MI

*Software Engineer – Thermal Runaway Propogation Diagnostics and Prognostics* — June 2023 - Present

- Developing novel diagnostic algorithms for embedded vehicle controllers in C for proactive detection and prevention of battery-related fires in EV's. Part of Agile-based team utilizing Jira for project management
- Optimizing software test development, ensuring specifications and documentation requirements are met

*Assistant Program Engineering Manager – BEV3 Programs* — February 2023 – June 2023

- Facilitated implementation of advanced technology projects to ensure on-time delivery of vehicle programs
- Managed Bose Strategic Supplier Innovation project to deliver first to market audio features for GM vehicles. Culminated with vehicle showcase to senior executives, gaining approval for further funding and feature development

*NextGen Controls Design Engineer – Vehicle Motion Embedded Controls* — August 2022 - February 2023

- Developed advanced brake control algorithm to classify road surface roughness using machine learning methods, increasing accuracy from 56% to 95%. Algorithm transferred from R&D to production for implementation. Assembled team, defined scope, collected vehicle test data in INCA, and performed machine learning optimization and feature selection in Python with SciKit-Learn library

*Data Analyst – Vehicle Motion Embedded Controls* — February 2022 - July 2022

- Automated and expanded Agile Framework analytics dashboards with SQL queries and Power BI updates
- Conducted exploratory analysis of Power BI timeline visualization capabilities to enhance existing vehicle program timeline visualization. Successfully integrated proposed solutions on dashboard for improved data visualization

*System Safety Engineer – Engine Controls* — June 2021 - February 2022

- Integrated systems level safety analysis methods including hazard and operability analysis (HAZOP), fault tree analysis (FTA), and preliminary hazard analysis (PHA) for EV Torque Arbitration System through Ansys Medini in accordance with ISO 26262 quality standard. Facilitated experts to align views and agree on requirements and mitigations
- Worked on validation of engine controllers involving HIL testing, updating tools, and hosting design quality reviews

**Lam Research** — Fremont, CA - Remote

*Hardware Engineering Intern* — April 2020 - August 2020

- Validated hardware design changes in robotic semiconductor deposition equipment using Python and statistical testing, leading to customer hardware changes enabling implementation of more efficient manufacturing processes
- Implemented feature extraction pipeline and machine learning models in Python to classify pneumatic valve events and predict valve response times from sensors, proving feasibility for adoption on new products

## EXTRACURRICULAR ACTIVITIES

**GM Carnegie Mellon University Recruitment Team –** *DEI Recruiting Lead* — July 2022 - Present

- Leading recruiting efforts for CMU DEI clubs, involving on-campus events with GM vehicles and 40+ students

**GM TRACK Diversity, Equity, & Inclusion Board –** *Team Co-Lead* — June 2021 – June 2023

- Spearheaded team of 10 to publish DEI cookbook; recognized by C-Suite executives for promoting DEI culture
- Led team of 30 to create 10+ DEI events and initiatives for 700 engineers in GM early career rotational program

## ACCOMPLISHMENTS & OTHER

**GEM Full Fellowship** – Carnegie Mellon Full Scholarship & Lam Research Internship
**UC Berkeley Research Publication** – "Algorithmic-driven design of shark denticle bioinspired structures for superior aerodynamic properties" J Ott, M Lazalde, GX Gu, Bioinspiration and Biomimetics (2019)
**Marathon Runner** – Detroit International Half Marathon (2022), Detroit Full Marathon (2023)
**Spanish** – Professional Working Proficiency