Gustavo Herrera Ramos

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EDUCATION

Master of Science in Engineering   Aug 2022 – Jun 2024
Tec de Monterrey, Campus Queretaro, Mexico

Mechatronics Engineering   Aug 2017 – Jun 2022
Tec de Monterrey, Campus Queretaro, Mexico

EXPERIENCE

Master of Science in Engineering's Thesis   Aug 2022 – May 2024
Mechanical characterization and design of metamaterials with the aid of additive manufacturing and AI

- Managed and cleaned experimental datasets, analyzing correlations between design parameters and mechanical properties using Python libraries. Reported results with matplotlib and seaborn.
- Implemented various Machine Learning algorithms (i.e. ANN, KNN, SVR, XGB, Random Forest) as surrogate models for mechanical structure optimization.
- Achieved a 53% improvement in metamaterial performance using the Metamodel Evolutionary Optimizer (MEVO) over Bayesian Optimization.
- Shared code and collaborated with peers using GitHub.
- Presented technical work to both technical experts and non-technical stakeholders at conferences and events.

General Electric Aviation Internship   Feb 2022 – Jul 2022
Mechanical design internship in Product Definition Externals for airplane turbines

- Created parametric 3D mechanical models in accordance with internal and industry standards.
- Implemented requested fixes and managed versions in Siemens Teamcenter and digital threads.
- Prepared presentations to expose task progress to team, superiors, and members of other areas.

Brose Internship   Jul 2021 – Feb 2022
CAD design internship in Customer Team for automobile seat structures.

- Modified 3D parts and assemblies based on customer requirements adhering to company guidelines.
- Evaluated design changes for functionality and manufacturability.
- Managed versions and data with Excel, Enovia, and SAP. Collaborated with engineers and manufacturing teams.

PROJECTS

(2024) Resume Website Development - Developed a portfolio website using Flask to showcase my resume and projects. Customized a template for a user-friendly design and built a 'Contact Me' section, using a REST API to save submissions to a database and send automatic email notifications. Deployed on Python Anywhere.

SKILLS

Python | Pandas | NumPy | Scikit-learn | TensorFlow | Unittest | Flask | Django | Selenium | REST APIs | Linux
C | Git | MATLAB | Databases | SQL | PostgreSQL | AWS | Spanish – Native | English – Bilingual | French – Beginner

COURSES

(2024) Linux Administration – Crystal Mind Academy
(2024) AWS Certified Cloud Practitioner Course – Udemy
(2024) The Complete SQL Bootcamp – Pierian Training
(2024) Django Masterclass: Real World Django Projects – Udemy
(2024) Data Structures and Algorithms – Zero to Mastery
(2024) The Complete Python Developer – Zero to Mastery
(2023) Python for Data Science and Machine Learning Bootcamp – Pierian Training

OTHERS

- (2021) Exchange program Automotive and Aeronautics Design, ESTACA, France
- (2017) Climbing Youth Word Championship at Innsbruck, Austria