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EDUCATION

Master of Science in Mechanical Engineering **Jan 2020 - Dec 2023**
The University of Texas at El Paso *El Paso, TX*

Thesis: *LiDAR Navigation Test Bed*; wrote MATLAB simulation investigating the use of LiDAR for localizing a drone with an a priori map.

Bachelor of Science in Mechanical Engineering **Jan 2017 - Dec 2019**
The University of Texas at El Paso *El Paso, TX*

Selected Coursework: Mechatronics, Heat Transfer, Thermodynamics, Mechanical Design

WORK EXPERIENCE

Machine Learning Engineer **May 2023 - Present**
Vinton Steel *El Paso, TX*

- Led the creation and deployment of an AI-driven object detection system. Utilized the open-source YOLOv8 algorithm to develop a custom model, achieving improved quality control and real-time analytics in a manufacturing environment. Engineered a React application for interactive data visualization integrated seamlessly with a PostgreSQL database. Deployed on an NVIDIA Jetson AGX Orin to conduct robust low-latency inference.
- Designed optimized steel structure for re-working rebar bundles, considering structural integrity, cost-effectiveness, and safety.
- Utilized Autodesk's Fusion 360 to design and generate 3D models, 2D drawings, and a comprehensive Bill of Materials for the three structures I designed.

Academic Adviser **Jan 2022 - Dec 2022**
The University of Texas at El Paso *El Paso, TX*

- Advised MECH, AERO, and CS students in the College of Engineering towards courses, scholarships, and internships.
- Helped optimize appointment scheduling for my Engineering Advising team using modern scheduling applications.

Graduate Research Associate **Jan 2020 - Oct 2021**
The University of Texas at El Paso *El Paso, TX*

- Designed a novel modified ray tracing algorithm in MATLAB to test the feasibility of localizing and navigating a drone with a LiDAR sensor.
- Conducted in-depth research on GPS-denied LiDAR algorithms through state-of-the-art academic papers, inspiring the development of a novel algorithm.

PROJECTS

Digital Trinket **Jul 2022 - Apr 2023**
Side Project Hobby

- Designed and Animated a "digital trinket" using Three.js for Castle Island Ventures, a venture firm focused exclusively on public blockchains. [CIV](#)

SLAM Project **Sep 2019 - Jan 2020**
Undergraduate Research

- Led a group of Mechanical Engineers on a SLAM (Simultaneous Localization And Mapping) project using an Intel RealSense Camera onboard the Intel RTF drone platform.

SKILLS

Programming Git, Python, Typescript, React, HTML, CSS, Three.js, bash, PyTorch, Postgres, C++, rust, L^AT_EX, MATLAB, Markdown

Hardware FDM Printers, Oscilloscope, Raspberry Pi, Micro Air Vehicles, Pixhawk

Miscellaneous Github, nvim, vimtex, Linux, Unix, Fusion 360, Solidworks, WSL2, tmux
ROS, Figma, Microsoft Office