Adrian Francisco Duran Ornelas

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Goals

I am an active leader and scrappy learner with experience in nearly all fields of engineering. I have a firm background in **electromagnetic propulsion**, **braking systems**, and **embedded vehicle control systems**. In addition to this I thrive working on close knit teams, and am determined to succeed in any environment, consistently delivering above set expectations.

Education

University of California, Irvine (GPA 3.8) **Expected Graduation: June 2027**
Henry Samueli School of Engineering – *Ph.D. in Material Science and Engineering*

University of California, Irvine (GPA 3.8) **Expected Graduation: June 2023**
Henry Samueli School of Engineering – *Bachelors of Science in Aerospace Engineering*

- **Physical Sciences and Engineering Special Merit Award** – Presented on research done on control systems of high speed hyperloop vehicles at CAMP Statewide Engineering Symposium
- **HSF Scholar** – Merit-based designation for academic achievement, personal strengths, and leadership

Engineering & Research Experience

UCI HyperXite – *A student-led research and design team that builds scale prototypes of the Hyperloop pod concept to participate in international Hyperloop competitions such as European Hyperloop Week.*

- **Lead Propulsion Engineer** **June 2022 - Present**
  - Analyze, design, test, and implement a three-phase linear induction motor (LIM) powered propulsion system
  - Develop an analytical thrust model of a LIM using E&M concepts and simulate electromagnetic behavior in COMSOL Multiphysics
- **Braking Engineer** **June 2021 – June 2022**
  - Designed fail-safe pneumatically-actuated linear friction brakes to stop with 2.5 g's of deceleration with actuation times below 20 milliseconds and a braking distance of 5.3 meters
  - Validated braking system through rigorous testing for thermal and mechanical performance in a custom manufactured Braking Test Bench to ensure braking performance
- **Embedded Systems Engineer** **July 2020 – June 2021**
  - Integrated the electronic systems and mechanical systems through a finite state machine to ensure consistent and safe operation while in motion through a 900 MHz RF radio and custom data transfer protocol to display telemetry in a data rich graphical user interface.

Kisailus Biomimetics & Nanostructured Materials Lab – Drone Project – *Small team of 3 undergraduate students at UCI researching impact resistant drone structures in conjunction with Eglin Airforce Base*

- **Undergraduate Researcher** **June 2021 – Present**
  - Researching the design of ultra-light composite materials in order to create a protective drone structure to preserve the functionality of micro drone under rough field conditions
  - Investigating incorporation of different microstructures to dissipate impact energy without catastrophic failure of drone's structural components

Leadership & Assorted Experience

American Society of Mechanical Engineers @ the University of California, Irvine

- **Project Manager – Human Powered Vehicle Competition** **October 2021 – Present**
  - Organize and lead various events, projects, and other resources to improve undergraduate engineering at UCI
  - Founded nationally competing project team supported officially by the Henry Samueli School of Engineering and national ASME organization in order to compete against other teams
  - Organize team of 40 undergraduate engineers and coordinate between the student team, university stakeholders, national ASME, and other company staff in order to acquire resources for the team
- **Webmaster** **March 2022 – Present**
  - Remodeled the ASME@UCI website to be able to host new media such as unique webpages through a markdown converter to allow any member to write a web post and actively maintain relevance of media, visit at asmeuci.com

Amazon Operations *Amazon GYR2, 17341 W Minnezona Ave, Goodyear, AZ*

- **Area Manager Intern I** **June 2021 – August 2021**
  - Managed 60 Amazon Associates to meet sortation goals through leadership and instinctive problem solving
  - Created a nationally implemented labor metric dashboard in JavaScript to track and predict Inbound warehouse performance and facilitate Inbound Dock Manager operations across North American Fulfillment Centers
  - Developed a suite of software to analyze and visualize conveyance performance at GYR2 and utilized data collected to begin a "Jam Clean" program to restore 300 hours of conveyance productivity weekly

Skills

Management Skills

- Leadership, Detail Oriented, Organization, Technical Writing, Public Speaking, Logistics

Technical Skills

- Proficient in: SOLIDWORKS, ANSYS, MATLAB, Python, JavaScript, GitHub, Linux, Embedded Systems, Blender, Microsoft Excel VBA and Macros, Web Development, GUI design, Microsoft Office, Google Workspace
- Exposure to: C++, C, CAN Databases, Virtual Reality Development, Pneumatic Assemblies and Valves