IEGO GARCIA

Pasadena, CA 91125
209-398-0590 33diegog@gmail.com linkedin.com/in/diegoegarcia03 Portfolio

Education

California Institute of Technology **Jun. 2025**
B.S. Mechanical Engineering 3.3 GPA *Pasadena CA*

Relevant Coursework

Mechanical Prototyping	Systems Engineering	Robotic Systems	Feedback Control
Design and Fabrication	Data Analysis	Mobile Robots	Aerospace Control

Experience

Gharib Research Group **Jan. 2024 – Present**
Undergraduate Researcher *Pasadena CA*

Re ned and Fabricated over 15 prototypes of flexible drone using rapid prototyping methods such as additive manufacturing and water jetting for plastics and lightweight materials.

Tested PID algorithm on z-axis constrained test setup, currently investigating novel methods in physical and algorithm design to achieve other modes of flight such as flapping and gliding without constraints, tuned using BetaFlight.

Recorded motor voltage values during testing to determine efficiency of flexible frame.

Caltech Rover Autonomy, Technology and Exploration Research **Sep. 2022 – Present**
Mechanical Co-Lead *Pasadena CA*

Completed structural analysis (e.g. static bending, buckling, stress) on components of rover suspension system and robotic arm rst using hand calculations then Ansys for FEA.

Designed 6 components along with technical drawings of rocker-bogie suspension system and 6-DOF robotic arm for rover using Solid-Works and Fusion 360

Fabricated hardware for rover suspension system and robotic arm using Mill, Waterjet, Lathe saving 500.00 in cost.

Projects and Leadership

Autonomous Shuttle Bot Caltech ME/CS/EE 75abc) **Mar. 2024**
Team Lead

Completed autonomy and hardware upgrades to current version of NASA Big Idea Finalist LATTICE system shuttle bot.

Developed closed loop system to extract point cloud from terrain below cable traversing robot, localize point in path with minimum slope, and return itself to that spot in path to deploy attached payload.

Upgraded 3D printed housings for multi-stage gearboxes delivering 900Nm of torque for self tensioning on cable system.

Rotary Transmission Caltech ME 14) **Feb. 2023**
Group Lead

Completed structural analysis (e.g. static bending, buckling, stress) on components of rover suspension system and robotic arm rst using hand calculations then Ansys for FEA.

Delivered CAD Model and 8 total technical drawings with speci cations and tolerances for machining components using Solid-Works and GD&T

Technical Skills

Hardware and Electronics: Additive Manufacturing, Mechatronics, Rapid Prototyping, Sensors and Actuators
Design and Analysis: CAD(Solidworks, Catia, Fusion 360), GD&T, DFMA, FEA(Ansys), Control Design
Software: Python, Matlab, Simulink, ROS, Java, C

Leadership Extracurricular

Pasadena Police Activities League PAL) **Jan. 2024 – Present**
STEM Tutor *Pasadena CA*

Caltech Fleming House **Sep. 2022 – Present**
Peer Advocate *Pasadena CA*

Caltech NCAA Soccer **Sep. 2021 – Present**
Team Member *Pasadena CA*