

Juan A. Carrano

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EDUCATION

GEORGIA INSTITUTE OF TECHNOLOGY

Mechanical Engineering (BS/MS Accelerated Program)

Atlanta, GA

Graduating May 2022

- Overall GPA: 3.69
- Dean's List Fall 2017/18, Spring 2018/20/21, Summer 2019/2020
- Georgia Tech Lorraine Study Abroad Program (Metz, France)

EXPERIENCE

NASA Jet Propulsion Laboratory – Spacecraft Mechanical Engineering Co-Op

Pasadena, CA

May 2021 – Aug. 2021

- Worked on the Structures & Configuration mechanical team on the Europa Clipper Mission
- Created design and worked with vendors for propulsion modules adapter plate and transportation system
- Conducted FEA and force calculations to determine optimal lift configurations for proof testing

NASA Langley Research Center – Robotics Engineering Intern

Hampton, VA

Aug. 2020 – Dec. 2020

- Worked on autonomous, reconfigurable, robotic in-space assembly system for lunar solar arrays
- Developed various end-effector designs using advanced modeling in Creo Parametric
- FEA with Creo Simulate to optimize structural stability of gripper mechanism design

Gulfstream Aerospace – Engineering Co-Op

Savannah, GA

Jan. 2019 – Dec. 2019

- Two semester rotations in different departments (Fuselage Structures, Wing Manufacturing)
- Initiated collaboration on development of robotic arm between Automation, Production, and Tooling
- Tested and analyzed data to improve aerodynamics of leading edges on G500/G600
- Designed, 3D-printed, tested, and implemented shop aids to improve production of the aircraft

Invention Studio at Georgia Tech – Prototyping Instructor

Atlanta, GA

Oct. 2018 – Present

- Advised in prototyping process for academic, research, and personal projects
- Trained faculty and students on various machines in the studio and shop safety
- Aided in maintaining equipment in 3D printing, laser cutting, waterjet, wood, and metal rooms

NASA Student Launch Initiative – Payloads Team

Atlanta, GA

Jan. 2020 – May 2020

- Developed deployment system for UAV to accomplish simulated lunar ice collection task
- Assisted with write up and documentation for Flight Readiness Review

Precision Machining Laboratory – Georgia Tech Research

Atlanta, GA

Jan. 2018 – Dec. 2018

- Component design with Rhino 3D to aid in creating G-code
- Ran, monitored, and troubleshooted various projects on Mazak and Multus multi-axis machines
- Reduced candleholder project machining time from one month to three days with G-code procedure

SKILLS

- **Technical Skills:** 3D Printing, CNC machining, Mechatronics, Laser cutting/engraving, Soldering, Waterjet cutting, Woodworking equipment, Sheet metal working, Geometric Dimensioning & Tolerancing (GD&T), MyRIO, Raspberry Pi, Arduino
- **Software Skills:** CAD (CATIA V5, PTC Creo, SolidWorks, Siemens NX, Rhinoceros 3D), Coding (MATLAB, LabVIEW, HTML, CSS, JavaScript), Finite Element Analysis (FEA), SculptPrint, Microsoft Office, General PC Skills
- **Languages:** English (fluent), Spanish (advanced)

PROJECTS / LEADERSHIP

Personal Projects

- ME 2110 Machine: Designed, prototyped, and tested autonomous robot to complete tasks in competition
- Smart Mirror: Built and programmed smart mirror with built-in motion sensor
- Water Eco Filter: Sketched and created detailed design for eco filter concept for team project

Boeing Forming Leaders in Technology

Atlanta, GA

May 2020 – Sep. 2020

- Selected from pool of applicants for program designed to produce leaders in technology industry
- Program included mentorship/professional development from Boeing engineers

High Powered Rocketry – Project K.U.M.A.R.

Savannah, GA

Aug. 2019 – Nov. 2019

- Co-founded project and assembled multi-disciplinary rocket team with other aspiring rocketeers
- Implemented knowledge of high-powered rocketry to build and launch rocket to 1,368 feet