JEREMY MANIAGO

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EDUCATION

The City College of New York   **Expected Graduation: May 2024**
B.E. Mechanical Engineering, Physics Minor   Cumulative GPA: 3.79

Relevant Coursework: Advanced Fluid Mechanics, Heat Transfer, Aerothermal Fluids Lab, Thermodynamics, Orbital Mechanics, Manufacturing Processes & Materials, Mechanical Systems Design, Mechanics of Materials, Engineering Materials, Computer Aided Drafting/Design, System Dynamics & Control, Numerical Methods in Engineering, Differential Equations

Affiliations: American Institute of Aeronautics and Astronautics (AIAA), Society of Automotive Engineers (SAE)

QUALIFICATIONS

Software: SolidWorks (3D modeling, Flow Simulation, Finite Element Analysis), ANSYS Fluent, Excel, Microsoft Office
Programming: MATLAB, Python, Arduino(C), HTML, CSS
Hands-on: Arduino, 3D printing, assembly of robots and structures, material testing, mechatronics sensors
Soft Skills: Problem Solver, Collaborative, Analytical, Creative, Reliable, Patient, Open-minded

RELEVANT EXPERIENCE

AIAA, City College, NY | Club Secretary | Aircraft Design Division Lead   **Aug 2023 – Present**
- Directed our AIAA Aircraft Design Division team by splitting aircraft design into subsections of aerodynamics, structures, and payloads design while assigning research tasks accordingly to improve design habits and encourage brainstorming ideas.
- Trained new AIAA members by exposing them to 3D CAD modelling software such as SolidWorks & OnShape and by holding workshops in CAD and CFD.

DOE SULI Intern, Princeton Plasma Physics Laboratory, NJ   **Jun 2023 – Aug 2023**
- Participated in a 2-week long training course in plasma physics and fusion energy.
- Researched novel x-ray 2D dual crystal spectroscopy imaging system that alleviates imaging errors from previous methods in imaging inertial confinement fusion (ICF) and high energy density (HED) plasmas.
- Developed a MATLAB script to calculate optimal crystal positions and translate them into a raytracing python package.
- Analyzed detector image efficiency and obtained spatial resolutions as low as 3 microns.

Research Assistant, Grove School of Engineering, NY   **Dec 2022 – Jan 2023**
- Conceptualized a cooling chamber that will maintain generated water droplets at a supercooled liquid state which will aid in research topics relating to additive manufacturing and shock-droplet interactions on airfoils
- Utilized MATLAB and heat transfer equations to aid in the selection of an appropriate chamber height, then created a simple model in SolidWorks to visualize and refine the design.
- Incorporated design ideas from published setups to create a simpler, cost-effective cooling chamber

PROJECTS

AIAA RC Plane, City College | Junior Co-designer   **Aug 2022 – Present**
- Designed landing gears for a Design Build Fly (DBF) RC plane with team collaboration.
- Used simulations such as computational fluid dynamics (CFD) to evaluate drag on wheel fairing and finite element analysis (FEA) to assess structural integrity of landing gear, leading to selecting optimal fairing design and carbon fiber materials.
- Manufactured the landing gear strut using carbon fiber, carbon Kevlar, and carbon Innegra composites. Utilized wet-layup method for applying epoxy & resin and vacuum-bagging for surface finishing.

Baja SAE car, City College | Sophomore Co-designer/manufacturer   **Aug 2021 – May 2022**
- Developed and designed driveshaft guards for an off-road Baja vehicle, ensuring cover and durability in rugged terrain.
- Assisted in researching suppliers for items and tools needed to fully assemble the Baja vehicle.
- Participated in the manufacturing process of additional vehicle components, working collaboratively with a team to ensure timely and accurate production.

Design and Analysis of Scooter, City College   **Apr 2023 – May 2023**
- Designed a kick scooter assembly with a front wheel suspension system.
- Simulated scooter handlebars and deck by utilizing FEA to assess stress & deflection. Iteratively redesigned geometry and materials of assembly to meet weight and deflection constraints.
- Evaluated cost of materials by using McMaster-Carr for stock material as reference. Final Assembly included a bill of materials (BOM) and required materials to manufacture the scooter.