JEREMY MANIAGO

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EDUCATION

The City College of New York   **Expected Graduation: May 2024**
B.E. Mechanical Engineering   Cumulative GPA: 3.8/4.0

Relevant Coursework: Aerodynamic Design, Thermal Hydraulics, Advanced Fluid Mechanics, Heat Transfer, Aerothermal Fluids Lab, Thermodynamics, Orbital Mechanics, Manufacturing Processes, Mechanical Systems Design, Mechanics of Materials, Computer Aided Drafting/Design, Numerical Methods in Engineering

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

TECHNICAL SKILLS

Software: SolidWorks (3D CAD, CFD, FEA), ANSYS Fluent, Excel, Microsoft Office, OnShape, XFLR5
Programming: MATLAB, Python, Arduino(C), HTML, CSS
Hands-on: Arduino, 3D printing, material testing, mechatronics sensors, assembly of robots and structures
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**
- Lead CCNY's 2024 AIAA Design Build Fly (DBF) team in building an RC plane by overseeing the aerodynamics, structures, and payloads subteams
- Ensured compliant aircraft design through system and sub-system requirements based on DBF rules. Iteratively improved designs based on constraints such as project timelines, manufacturability, and assembly integration, increasing efficiency
- Trained new club members in 3D CAD utilizing Solidworks and Onshape. Introduced members to fundamental aircraft design concepts alongside Computational Fluid Dynamics (CFD) and Finite Element Analysis (FEA) through workshops

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 maintains generated water droplets at a supercooled liquid state which aided 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. Created a prototype in SolidWorks to visualize and refine the design.
- Incorporated design ideas from published setups to create a simpler, cost-effective cooling chamber.

PROJECTS

AIAA DBF RC Plane, City College | Junior Co-Designer   **Aug 2022 – Present**
- Designed the landing gear for the 2023 DBF competition RC plane with team collaboration.
- Used CFD to evaluate drag on wheel fairings and FEA to assess structural integrity of landing gear upon landing, 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.
- Researched and helped select the correct suppliers for items and tools needed to fully assemble the Baja vehicle.
- Participated in the manufacturing process of additional vehicle components by working collaboratively with a team

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 reduce weight and meet deflection constraints.
- Evaluated cost of materials using McMaster-Carr. Produced a bill of materials (BOM) that includes manufacturing costs.