**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**

* Led 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.