**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:* Fluid Mechanics, Heat Transfer, Thermodynamics, Orbital Mechanics, Mechanical Systems Design, Mechanics of Materials, Computer Aided Drafting/Design, Numerical Methods, Materials Science, Statics/Dynamics, Mechatronics, Engineering Design, Calculus 3/2, Differential Equations

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

**QUALIFICATIONS**

*Software:* Solidworks, OnShape, MATLAB, Excel, Microsoft Office

*Programming:* Python, Arduino(C), HTML, CSS

*Hands-on:*Arduino, assembly of robots and structures, material testing, mechatronics sensors., 3D printing

*Soft Skills:* Problem Solver, Collaborative, Analytical, Creative, Reliable, Patient, Open-minded

**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
* Utilized computational fluid dynamics (CFD) to evaluate pressure profiles and optimize the design for less induced drag
* Conducted basic finite-element analysis (FEA) on the landing gear strut to assess the impact resistance of Kevlar and Innegra fibers, and selected the appropriate material to withstand and absorb energy on impact
* Manufactured the landing gear strut using carbon fiber, kevlar, and innegra composites. Utilized wet-layup method for applying epoxy & resin and vacuum-bagging for surface finishing

**Baja SAE car, City College Aug 2021 - May 2022**

* Developed and designed driveshaft guards for an off-road Baja vehicle, ensuring 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

**Reverse Engineering of Portable Fan, City College Jan 2021 - May 2021**

* Coordinated and collaborated with a team to sketch and re-design a hand-sized portable fan
* Demonstrated 2-D sketching skills and scaled dimensioning**.** Utilized Solidworks software to create 3-D models of the fan
* Examined the fan’s internal assembly via deconstruction and identified areas of improvement

**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
* Trained new AIAA members by exposing 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 introduction course in plasma physics and fusion energy
* Researched novel x-ray 2D dual crystal spectroscopy imaging system expected to outperform previous methods in imaging inertial confinement fusion (ICF) and high energy density (HED) plasmas
* Developed a MATLAB code to calculate optimal crystal positions for the system and translate them into a raytracing python package. Simulated up to 50 million photons using the 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 and designed a cooling chamber with variable temperature control below 0 degrees Celsius to prevent supercooled droplets from crystallizing during testing.
* 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 and researched suppliers that can provide cheap alternatives

**AWARDS & ACHIEVEMENTS**

* Dean’s List, The City College of New York **Jan 2021 – Dec 2021**
* Member of Arista Honors Society, Midwood High School **May 2019 – Jun 2020**