Ruben Jovel

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Education

SUNY University at Buffalo Buffalo, NY

Bachelor of Science in Mechanical and Aerospace Engineering (GPA: 3.973) *Anticipated May 2027*

- Organization/Awards: SEDS, SHPE, Tau Beta Pi, Dean's List, Pride of NY

Experience

Manufacturing Engineering Intern May 2025 – August 2025

Lockheed Martin *Orlando, FL*

- Executed composite layups for the F-35 Lightning II's EOTS shroud using pre-preg fiberglass and carbon fiber, ensuring 100% adherence to fiber orientation and quality standards, resulting in zero defects.
- Developed and tested optimized laser cutting techniques for the LRASM missile component, reducing post-processing time by 25%
- Investigated and tested various layup and matrix configurations to determine the optimal setup for the epoxy injection pump process, informing tool design and manufacturing strategies.
- Designed and 3D printed custom tools to support manufacturing operations, including a blade holder used during EOTS window trimming, which reduced trimming time by 50% and improved accuracy by 25%

Systems Engineering Intern June 2024 – August 2024

Northrop Grumman *Chandler, AZ*

- Performed system-level verification for the MBRV-11 program, linking 200+ requirements to supporting artifacts and ensuring compliance with MDA standards.
- Collaborated with cross-functional teams to develop system-level cable diagrams and validate system requirements, ensuring traceability and alignment with MDA's system requirements and interface standards.

Projects

Macro-Pad | *PCB Design, Fusion360, Rapid Prototyping, Tolerance Analysis* July 2025 – Present

- Designed a custom numeric keypad from scratch, utilizing KiCad for PCB layout and component selection.
- Designed and rapid prototyped a custom enclosure using Fusion360 and 3D printing, creating a functional and user-friendly housing for the electronics.
- Developed and uploaded custom firmware, enabling programmable key shortcuts for tailored user functionality.

RC Submarine | *Microcontroller, Sensors, Actuators, Soldering, Mechanism* April 2025 – May 2025

- Designed and 3D printed a custom rack-and-pinion ballast system, enabling precise depth control and vertical motion through a high-torque motor and syringe-based water intake/ejection system.
- Integrated and programmed the submarine's subsystems, achieving automatic depth control and balance through sensor-driven dispensing of water and maintaining a target threshold.

Stapler Product Design | *SolidWorks, GD&T, FEA, DFM, Manufacturing* May 2024 – August 2024

- Modeled 13 stapler components in SolidWorks and created detailed technical drawings using GD&T principles, ensuring manufacturability.
- Conducted FEA to optimize load-bearing components, increasing factor of safety to 2 while reducing material cost by $0.30 per unit.

Curve Adapter | *CAD, Tool Design, 3D Printing, Machining, CNC* January 2024 – June 2024

- Led a team to design and manufacture a custom adapter for the rocket's body tube, utilizing manual and CNC milling techniques to produce 12 curved pieces with precise alignment and integration.
- Developed and prototyped 3D-printed jigs to drill angled holes and enable secure fastening of adapters, reducing assembly time by 50% and improving overall efficiency.
- Tested and optimized materials and designs, incorporating threaded inserts and selecting suitable 3D printing materials to improve jig durability and repeatability.

Technical Skills

Skills: CNC Milling and Lathe, Tooling Design, 3D Printing, DFM, FEA, GD&T, Prototyping
Software: SolidWorks, Creo, Fusion360, MATLAB, Python, Arduino, IBM DOORS, Windchill, SAP, Jira
Certifications: SolidWorks CSWA