SHIPHI PANICKER

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OBJECTIVE: Second year Mechanical Engineering student seeking a co-op in composite design, material analysis, and precision engineering. Co-op availability from May – December 2027.

EDUCATION

Rochester Institute of Technology **Expected Class of 2030**
Bachelor/Master of Science in Mechanical Engineering **GPA**: 3.71

Coursework: Physics II, Statics, Thermodynamics, Measurements Lab, Characterization of Metals, Eng Comm & Tolerancing
Technical Skills: SolidWorks, AutoCAD, Inventor, Fusion, MATLAB, Simcenter Inspire, ANSYS, Additive Manufacturing, DFM
Manufacturing & Fabrication: Lathes, Mills, FDM 3D Printing, Soldering, Hand Tools, GD&T, CAD Drawings
Licenses & Certifications: SOLIDWORKS Certified Associate (CSWA); FCC Amateur Extra Class License (AA1SP); ARRL Amateur Extra Volunteer Examiner; Autodesk Certified Professional (AutoCAD, Inventor, Fusion)

EXPERIENCE

HOK ACE Mentorship Program *Manhattan, NY, Intern* November 2024 – April 2025

- Applied architectural design principles to building projects integrating structural and MEP system design
- Collaborated with various teams to analyze building systems, structure, and engineering design considerations

Summer Design Institute *Staten Island, NY, Intern* July 2024 – August 2024

- Collaborated on the design and build of a mechanical baseball pitching robot using Inventor, showcased to throw the ceremonial first pitch at a Staten Island FerryHawks game as a community STEM outreach demonstration
- Guided a group of students through FCC Amateur Radio Technician license exam preparation and testing logistics

EXTRACURRICULARS

RIT SPEX Rovers *Life Detection Associate Designer* January 2026 – Present

- Designed a soil collection and separation chamber with integrated water reservoirs to create mixed samples for Ninhydrin and Spectrometer analysis to be analyzed by a sensor assembly
- Created an agitator to improve mixing of Ninhydrin with soil samples for quicker and more accurate life analysis

RIT Hot Wheelz *Chassis Subsystem Lead* September 2025 – Present

- Created detailed CAD models in SolidWorks of the car's bottom aeroshell using surface lofting with guide curves, to serve as a reference for future designs and modifications
- Collaborated with team members to redesign the bottom shell breaking it into three modular pieces for easier assembly during competition resulting in quicker assembly
- Designed and integrated pulley-based egress mechanisms to enable faster and safer panel removal during driver exit improving overall egress efficiency according to competition regulation

SITHS Amateur Radio League *Design Lead* June 2023 – Present

- Designed modular mounts for Heltec Wi-Fi LoRa (ESP32 based) devices with integrated GPS for easier portability and emergency communications
- Designed and rendered production ready 3D printed cases with parametric dimensioned and detailed renders to display to members before final implementations

PROJECTS

Carbon Fiber Monocoque Solar Car September 2026 – Present

- Designing a bullet style, 3-wheel carbon-fiber aeroshell in SolidWorks using multi-loft surface modeling with guide curves to meet aerodynamic and packaging constraints
- Structuring surface models for manufacturability, mold draft angles, and curvature to support carbon fiber fabrication
- Developing a program in SolidWorks to update parametrized CAD variables based on CFD drag coefficient outputs

Custom Foxhunt Offset Attenuator August 2026 – Present

- Designed a custom RF offset attenuator from schematic to enclosure, including PCB design in KiCad and a compact SolidWorks enclosure analyzed with FEA to optimize weak points
- Selected and integrated an ESP32-WROOM-32 with four switchable crystal oscillators via an SP4T RF switch, an ILI9488 TFT display, and PIN diode TX protection
- Designed the power system around a TP4056 Li-Po charger, AMS1117-3.3 LDO, and MT3608 boost converter for compact, self-contained field operation

YagiCAD` | RF Antenna Design Tool July 2025 – August 2025

- Built a Python based antenna design tool to calculate element length and spacing for Yagi-Uda antennas using electromagnetic scaling and linear interpolation
- Generated parametric geometry via FreeCAD API to enable rapid prototyping and frequency scaling of various antennas
- Validated computed dimensions against standardized VHF/UHF ratios and cross checked with correction factoring to create accurate models