HADLEIGH NUNES

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EDUCATION

Olin College of Engineering May 2021
Bachelor of Science in Engineering, E: Sustainable Systems

PROFICIENCIES AND SKILLS

Software: SolidWorks • AutoCAD • OnShape • ANSYS • LabVIEW • MS Word & Excel • Adobe Suite
Programming: MATLAB • Python • GitHub • ANSYS Journals
Fabrication: Sheet metal • Manual mill • CNC machining • Laser cutter • FDM printing • Shop tools • Sewing machine • Composites

SELECTED EXPERIENCE

Lesley Ellis School Sept 2024-June 2026
Makerspace Teacher *Arlington, MA*

Designed and taught hands-on project-based curriculum for classes of preschool through 8th grade students in progressive private school with rich history.

· Created curriculum in line with school's mission of anti-bias education centered around accessible design.
· Designed engaging projects and challenges to teach basic engineering concepts and shop skills.
· Managed school workshop and tools, redesigned spaces and implemented safety protocols.

Accelerate Wind July 2021-April 2024
Mechanical Engineer *St. Louis, MO*

Early-stage hardware startup focused on small-scale wind energy for commercial buildings. Modular units consist of a cross-flow turbine mounted above a spoiler designed to take advantage of higher wind speeds at rooftop edges.

Half-scale test spoiler at Windward Engineering test site *Spanish Fork, UT*
· Guided mechanical engineering interns during initial concept designs and CAD implementation.
· Produced CAD assembly, drawings, and BOM of aluminum half-scale test spoiler in Onshape.
· Simulated IEC61400 wind turbine requirement cases in ANSYS Fluent to determine structural requirements.
· Led communication with manufacturers to produce test spoiler to requirements.
· Developed test plan to isolate and measure reaction forces for simulation validation.
· Built frame components using onsite machine shop; performed load cell calibration.
· Implemented test plan to safely install frame, spoiler, and instrumentation.

Wind sensor array at Windward Engineering *Spanish Fork, UT*
· Designed and built turbine-located sensor array frame to minimize self-interference and withstand wind loads.
· Installed sensors and produced ground station wiring diagrams and procedure documentation.
· Programmed data collection and upload of wind data for test verification.
· Processed wind data in MATLAB for comparison with CFD models and PTV tests.

Flow imaging for CFD validation at Windward Engineering *Spanish Fork, UT*
· Worked with partner startup to develop test plan for particle tracking velocimetry.
· Successfully ran two PTV tests which produced validation data for CFD models.

Simulation
· Performed CFD simulations of building mounted spoiler and turbine to evaluate speed increase and power output using the actuator disk model.
· Trained new employees in ANSYS Fluent workflow; transitioned simulation tasks to remote HPC clusters increasing fidelity and decreasing computing time.
· ANSYS parametric study using variable-driven geometry to optimize spoiler shape for highest power output.