Matthew Halas

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Summary

Nearly 2 years of hands on experience as a wind turbine technician. 2+ years of mechanical engineering experience, including experimental design, testing, and data analysis. Eager to continue learning in a hands-on job.

Work Experience

Vestas | Wind Turbine Technician — Sep 2022-May 2024

- Climbed turbines daily for troubleshooting, inspections, and servicing.
- Helped to improve the YTD availability of my wind farm to 99.5%, well above the contractual requirement of 97%.
- Utilized SCADA systems to monitor turbines and analyze data to plan maintenance tasks.
- Led crews of technicians in maintenance tasks.
- Mentored new technicians using a mix of hands-on training and theory.
- Prepared reports of findings during inspections, including recommendations for repairs or replacements.
- As the site's quality, safety, and environment (QSE) lead, I ensured adherence to Vestas policies and planned QSE improvements on the site where needed.
- Traveled to other sites to provide support and attend training.
- Used multimeters and electrical diagrams to troubleshoot AC and DC circuits.
- Used manometers and hydraulic diagrams to troubleshoot hydraulic systems.

ReEnergize Co | Solar Engineer — Jul 2022-Aug 2022

- Installed and commissioned residential solar systems, including racking, panel mounting, wiring, and inverters.
- Communicated with homeowners, addressing their questions or concerns about the installation.

NOVA Chemicals | Mechanical Engineering Intern (Fluid Dynamics Team) — May 2019-Aug 2020

- Debugged and added features to a pipeline purge simulator, using an automated testing script to aid with debugging. The improved simulator was able to run all test cases in a quarter of the time.
- Conducted several literature reviews, using LaTeX to write reports on findings.
- Led the prototyping of a machine learning algorithm for classifying polymer grades based on physical properties.
- Demonstrated the potential of the algorithm and showcased results to the engineering team.
- Designed and executed an experiment to test the creep behavior of a polymer sample, using SolidWorks to design the testing jig and LabVIEW to record data.
- Provided support in the lab, helping with sample preparation and analysis.

JCI Filtration and Separation | Research and Development Intern — May 2018-Aug 2018

- Conducted literature reviews to understand current gas-liquid separation technologies and identify areas for improvement.
- Designed modifications for model gas-liquid separators, considering factors such as efficiency, cost-effectiveness, and ease of implementation.
- Tested the modified separators, collected, and analyzed data on flow profile, relative humidity, temperature, and pressure.
- Compiled reports summarizing the test results and presented findings to clients.
- Developed testing procedures for the properties of various filtration media to create a database to aid in media selection.

Education

University of Calgary | BSc. in Mechanical Engineering, With Distinction — Sep 2016-Dec 2021

- Specialization in Energy and Environmental Engineering
- 2nd place in 2021 Schulich Engineering Competition, competed in 2022 Western Engineering Competition
- Achieved an overall GPA of 3.7

Projects

Capstone Project — Sep 2019 – Apr 2020

- Collaborated with my team to analyze a novel UAV design using computational fluid dynamics (CFD) in subsonic and supersonic flight conditions.
- Led the simulation of the combustor, researching and implementing turbulent combustion models.
- Developed a CFD simulation of combustion in a simplified ramjet engine.
- Validated the solver by comparing it with experimental data from a common research model.
- Compiled results into a final report and summarized the major findings in a presentation for the capstone project judges.

Extracurriculars and Volunteering

Nature Conservancy of Canada (NCC) | Volunteer Conservation Engagement Intern — Mar 2022 – Jun 2022

- Coordinated the conservation engagement team to plan, organize, and attend stewardship and community outreach events.
- Surveyed NCC properties to verify or add locations of manmade features such as fences and buildings.
- Designed an interpretive display showcasing the rehabilitation work that was in progress at an NCC property.
- Fostered interest in conservation by talking to visitors, explaining our work, and answering questions.

Energy and Environmental Engineering Student Association (EEESA) | VP Events — Apr 2018 - Apr 2021

- Led the planning and organization of social events for engineering students.
- Assisted other members of the Student Association in their roles as needed.
- Collaborated with another Student Association to plan the largest event hosted by EEESA.
- Created new virtual and outdoor events to comply with COVID restrictions to maintain a sense of community during remote semesters.

Zeus Electric Motorsport | Mechanical Team Member — Sep 2017 – Apr 2019

- Designed a new motorcycle frame using SolidWorks, drawing inspiration from existing electric motorcycle frames, and applying the required dimensions for our bike.
- Performed finite element analysis on the new frame to determine which frame offered the optimal balance between weight and strength.
- Designed a prototype for a waterproof battery case.

Skills and Interests

Software: Python, JavaScript, OpenFOAM, MATLAB, LaTeX, SolidWorks, ANSYS, Autodesk Fusion 360, Cura, GitHub, MS Office
Communication: Technical Reports, Instruction Manuals, Presentations
Languages: English (Fluent), Polish (Conversational)