

Matthew Halas

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Summary

Wind turbine technician with a background in Mechanical Engineering. 2+ years of professional experience including research and development, data analysis, technical writing, and design.

Work Experience

Vestas | Wind Turbine Technician Sep 2022-Present

- Climbed turbines daily for troubleshooting, inspections, and servicing, ensuring optimal performance.
- Regularly led crews of technicians in performing maintenance tasks, coordinating work assignments, and ensuring adherence to safety protocols.
- Prepared reports documenting findings during inspections, including recommendations for repairs or replacements.
- Traveled to various sites (20% of the time) to provide support and attend training sessions.
- Utilized multimeters and electrical diagrams to troubleshoot AC and DC circuits.

ReEnergize Co | Solar Engineer Jul 2022-Aug 2022

- Installed residential solar systems, including racking, panel mounting, wiring, and system commissioning.
- Collaborated with homeowners, addressing their questions or concerns about the installation.

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

- Tasked with debugging and enhancing a pipeline purge simulator, utilizing programming skills to develop an automated test system.
- Improved the pipeline purge simulator using results of the tests, resulting in the simulator solving 100% of test cases in less than half the time of the original simulator.
- Conducted a preliminary literature review on gas-solid separators, focusing on reducing downtime in fluidized bed reactors.
- Led the prototyping of a machine learning algorithm for classifying polymer grades based on physical properties.
- Developed and trained the algorithm using a relatively small dataset, achieving a 90% accuracy rate in predicting polymer grades.
- Demonstrated the potential of the algorithm by showcasing its effectiveness, suggesting its scalability with a larger dataset and further refinement.

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

- Conducted literature reviews to understand current gas-liquid separation technologies and identify potential areas for improvement.
- Brainstormed modifications for model gas-liquid separators, considering factors such as efficiency, cost-effectiveness, and ease of implementation.
- Performed rigorous testing of the modified separators, collecting, and analyzing data on flow velocity, relative humidity, temperature, and pressure.
- Compiled reports summarizing the test results and presented the findings to the engineering team and customers.
- One of the modifications designed and implemented in the field resulted in a measurable improvement in the performance of the customer's gas-liquid separator.
- 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, GPA 3.7 Sep 2016-Dec 2021

- Specialization in Energy and Environmental Engineering
- 2nd place in 2021 Schulich Engineering Competition, competed in 2022 Western Engineering Competition

Projects

Senior Design Project	Sep 2019 - Apr 2020
<ul style="list-style-type: none">○ Collaborated within a team to analyze a novel UAV engine intake using computational fluid dynamics (CFD) for supersonic flight conditions.○ Took the responsibility of simulating combustion in the engine, focusing on researching and implementing turbulent combustion models in CFD.○ Developed a comprehensive CFD simulation of combustion in a simplified ramjet engine, optimizing parameters and boundary conditions to accurately represent real-world scenarios.○ Validated the simulation results by comparing them with experimental data obtained from a widely recognized research model, ensuring accuracy and reliability.○ 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 Volunteer Conservation Engagement Intern	Mar 2022 - Jun 2022
<ul style="list-style-type: none">○ Coordinated with my team to plan, organize, and attend stewardship and community outreach events.○ Tasked with various field work such as mapping, monitoring, and cleaning NCC properties.○ Fostered interest in conservation within the community by talking to visitors, explaining our work, and answering any questions that they had.	
Energy and Environmental Engineering Student Association VP Events	Apr 2018 - Apr 2021
<ul style="list-style-type: none">○ Responsible for planning and organizing social events for engineering students.○ Created new events to comply with the restrictions brought on by the pandemic to maintain students' sense of community.	
Zeus Electric Motorsport Mechanical Team Member	Sep 2017 - Apr 2019
<ul style="list-style-type: none">○ Collaborated with my team to brainstorm and design a new motorcycle frame in SolidWorks.○ Performed FEA on the new frame to determine which frame offered the required strength with the least weight.○ Designed a prototype for a waterproof battery case.	

Skills and Interests

Software: Python, JavaScript, OpenFOAM, MATLAB, LaTeX, SolidWorks, ANSYS, MS Office, GitHub
Communication: Technical Reports, Instruction Manuals, Presentations
Languages: English (Fluent), Polish (Conversational)
Certifications: Remote First Aid & CPR/AED Level C, WHMIS