Jincong Li

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Education

The University of British Columbia **Sep. 2023 – Sep. 2024**
Master of Mechanical Engineering *Vancouver, BC*

The University of British Columbia **Sep. 2018 – May. 2023**
Bachelor of Applied Science *Vancouver, BC*

Relevant Coursework

- Fluid-Structure Interaction
- Finite Element Method/Analysis
- Computational Fluid Dynamics
- Fluid Mechanics
- Aircraft Aerodynamic
- Aerospace Propulsion System
- Mechanical Vibration Analysis
- Mechanics of Materials
- Calculus of Variation
- Engineering Data Analysis

Experience

Lilin Group **May 2020 – August 2020**
Metal Treatment Engineer Internship *Tianjin, China*

- Acquired expertise in transporting raw materials utilizing hoisting equipment.
- Gained hands-on experience in the intricacies of metal processing, encompassing processes such as tempering, smithing, and casting, contributing to a nuanced understanding of metallurgical techniques.
- Operated CNC lathe and milling machines, showcasing adeptness in utilizing cutting-edge machinery for precision engineering tasks.
- Studied the distinctive performance attributes of steel with varying compositions and corresponding percentage content, developing a nuanced comprehension of metallurgical properties.

Projects

Model Analysis on Ship Hulls under Different Wave Conditions | *Simflow, Gmsh, Abaqus, Calculix* **May 2024**

- Worked on Solidworks and Gmsh to create the required domain then mesh it with tests of convergence.
- Run simulations with mesh motion (ALE) and multi-phase flow using simflow on Sockeye from UBC as well as on Beluga from computecanada.
- Conducted frequency/vibration analysis on ship hulls, such as DTMB 5415 and BURNSi (Benchmark Underwater Radiated Noise Simulations) models.
- Modified the solver files written in C to simulate the waves/sea states.

Pressurized Experimental Device | *CFD(Ansys Fluent), Solidworks, Abaqus* **September 2022**

- Designed and built a device for a complex fluid laboratory to study the behavior of air bubbles travelling in non-newtonian fluid.
- Designed and modelled the supporting base in Solidworks and validated its performance in Abaqus. Then built it out of 8020s, during which gained practical experience in constructing 8020s.
- Learned technical knowledge of sealing structure in pressurized device and relevant regulations such as CSA B51.
- Developed project management skills especially in budget estimating and controlling. Gained experience in handling unexpected situations during the project such as requirement change and communication barrage.

Wing Design for Cargo Plane | *CFD(Ansys Fluent), XFLR5, MATLAB* **November 2021**

- Designed a flapped wing for a cargo plane for the highest takeoff weight, least flight time and least fuel consumption under given constraints.
- Modelled the plane in MATLAB mathematically to track its performance in the taking-off, cruising and landing conditions.
- Optimized the lift and drag coefficient of the wing by modelling it in Ansys and XFLR5 and tuning the shape of the airfoil and flap of the wing .

Powered Air Purifying Respirator for Bus Drivers | *Solidworks, MATLAB* **October 2020**

- Designed and modelled a device consisting of a headpiece that fits over the driver's head, a pipe that connects the headpiece, through a threaded attachment, to the filter system, and a blow-box that contains a pump that drives the airflow through the PAPR and the filter to remove COVID-19 particle.
- Estimated the average cost of the PAPR according to the real price of each component and compare with other existing commercial PAPRs.

Technical Skills

Languages: MATLAB, Python
Modelling & Analysis Tools: Simflow, Abaqus, Solidworks, Ansys Fluent, XFLR5(aerodynamic), MATLAB&Simulink, Arduino
Basic Tools: Office, Latex