

Yulim Lee

Email: 96yrlee@gmail.com

Cell #: 647-472-3946

Address: Maple, Ontario, Canada

Portfolio Website: 96yrlee.github.io/CAD_Portfolio.html

LinkedIn: linkedin.com/in/leeyulim/

TECHNICAL SKILLS & QUALIFICATIONS

Proficiencies: Knowledge of material testing and manufacturing processes, Creating CAD drawings, Stress analysis, Preparing technical documentation (ex. BOMs, specifications, reports), Troubleshooting electronics and code

Software: AutoCAD, SolidWorks, Inventor, ANSYS Workbench, MATLAB, MS Office (Excel, Word, PowerPoint)

SOFT SKILLS & OTHER

Soft: Effective at meeting deadlines and prioritizing tasks in a fast-paced environment, Great at understanding and conveying technical/nontechnical information, Excellent at working independently and in multidisciplinary teams

Personality: Self-motivated learner, Hands-on problem solver, Friendly and cooperative with coworkers

Mobility & Other: Canadian Citizen, Willing to relocate and travel for work, Ability to work remotely and on site

EDUCATION

Bachelor of Applied Science in Mechanical Engineering - University of Toronto

Graduated June 2019

- Concentration in Solid Mechanics & Design
- Minor in Robotics & Mechatronics

PROFESSIONAL WORK EXPERIENCE

Mechanical Engineering Intern - Isowater Corporation

Sept. 2017 – Aug. 2018

- Ensured adherence to the Ontario Gas codes by designing safety control systems for the methanol production process system, participating in Failure Mode and Effects Analysis and incorporating safety relief valves
- Designed and installed two sight tubes with level sensors for the electrolyser system, within a week from a limited selection of parts at the office, to both manually confirm and remotely log water levels
- Collaborated with chemical and electrical engineers to design chemical process systems, interpreting PIDs and creating both 3D Inventor models and 2D AutoCAD drawings for all projects, equipment and workplace layouts
- Determined the most inexpensive sheet metal and supplier for an equipment skid with a max. deflection of 2.5mm, calculating the minimum thickness and most economical alloy through stress analysis calculations
- Emailed and called suppliers to obtain parts that met project specifications, discuss quotes and schedule delivery times, ensuring multiple chemical process systems were completed within schedule.
- Acted as key point of contact with a prototype's off-site operator by receiving weekly reports and troubleshooting issues via emails or in-person visits to the operator's location, minimizing prototype downtime

RELEVANT ENGINEERING PROJECTS

Passive Airship Pressure Regulator – (Capstone for Solar Ship Inc.)

Sept. 2018 – Apr. 2019

- Collaborated on a four-person team to design a regulating valve for an airship's ballonet system, providing the client with presentations and reports that guaranteed their on-going satisfaction with the developing design
- Created the final 3D assembly model with SolidWorks, rendering visuals and animations to assure the client of the prototype's feasibility
- Determined the dimensions of the valve design using force analysis, ensuring it met design specifications.

PID-Controlled Pendulum - (Control Systems I)

Sept. – Dec. 2018

- Led a team of four mechanical engineers to program PID controls into a motorized pendulum, organizing team meetings, coordinating with the technicians of the electronics lab and arranging the storage of the project.
- Assembled and tested the physical components and code before implementing PID controls to ensure optimal tuning conditions, checking with a multimeter and tests that there was proper data flow between all parts
- Achieved the desired step response by calibrating the PID control system through the Ziegler–Nichols method and manual tuning, and succeeding as one of the only teams to program the pendulum to follow a sine wave
- Reviewed the final report, ensuring it met department standards and that all required information was included

Aluminum Plate and Acrylic Sheet Lap Joint Design - (*Mechanics of Solids II*) **Jan. – Apr. 2017**

- Cooperated with a partner to design an acrylic and aluminum lap joint for the greatest ultimate stress per weight, analyzing with ANSYS and Solidworks to reduce mass and maximum stress of each design iteration
- Built and tested a prototype lap design with a laboratory's tensile load testing machine and compared it to theorized results, determining incorrect assumptions and incorporating data to design a better joint
- Wrote a concise report summarizing simulation analysis, prototype construction, testing methodology, and future considerations, successfully achieving a 98% on the report compared to the class average of ~80%

Circuit Heat Fin Placement Design Lab – (*Heat & Mass I*) **Jan. – Apr. 2017**

- On a team of four, determined the best arrangement of heat sinks on a circuit board by creating heat distribution models after collecting lab temperature data of the components in various configurations
- Coded MATLAB scripts that used a Gauss-Seidel algorithm to solve energy balance numerical equations, creating a simulation that predicted the temperature gradient of the circuit, later verified through testing

Carbon Fiber Solar Race Car – (*U of T Blue Sky Solar Car Design Team*) **Nov. 2016 –Aug. 2017**

- Collaborated with dozens to construct the carbon-fiber monocoque chassis as a fabricator and machinist, including its MDF plug and fiberglass mold, using power tools, sanding equipment, and other supplies
- Inspected and repair leaks in the vacuum bag assembly before curing in an industrial oven, to ensure that the epoxy properly cures and adheres to the various layers forming the chassis
- Took initiative to become the main machinist and prevent a backlog by discussing with division leads to optimize tasks, and interpreted rough drawings and verbal instructions to machine steel molds and beams

Airplane Stringer Stress Analysis – (*Mechanics of Solids I*) **Sept. – Dec. 2016**

- Collaborated on a team of five to consolidate and validate the data from four different stress analysis methods (i.e. FEA, photoelasticity, strain gauge, tensile), summarizing conclusions in several lab reports
- Using Excel, calculated the stress for all methods' data and created graphs to visually show the growth of stress and applied pressure over time

FURTHER EDUCATION

Coursera Certificates

- Six Sigma Green Belt - University System of Georgia - August 2020
- Android App Development - Vanderbilt University - November 2020

George Brown College

- Machining Courses: Machining I – 2016, Machining III & Welding - 2018

EXTRA-CURRICULAR ACTIVITIES

Job Shadowing Program: Lake Harbour Co. Ltd. – (*University of Toronto Career Centre*) **Nov. 2020**

- Developed with four random people and within 4 hours a 1-year business strategy plan that addressed the pandemic for Lake Harbour Co., using only a summarized business and market analysis presentation file
- Presented our strategy and analysis to the president and other company leaders, impressing them with how closely our suggestions matched their internal plan and receiving positive praise from the president
- Organized follow-up communications and meetings with the president (i.e. job shadowing volunteer), and other members of the group to continue receiving resume & career advice

Hobbies & Interests

- Sketching, knitting, reading, playing games with friends, skiing, taking care of family dogs