JILL AGHYOURLI ZALAT

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PROFESSIONAL EXPERIENCE

HARDWARE ENGINEERING INTERN, Movia Media *Sept. 2020 - Dec. 2020*
- Provisioned 50 GPS hardware devices under tight deadlines in order to facilitate launching of 5 advertising campaigns across North America
- Introduced modification to enclosure design, ensuring greater durability of device components and reducing frequency of device maintenance send-backs
- Trained incoming interns on device build procedures and best company practices

PROPULSION TESTING SPECIALIST, Ryerson Helium *Sept. 2019 - April 2020*
- Reduced overall cost by 30% by drafting new compact testing rig design in SolidWorks to be used on flight vehicle, minimizing number of parts required and removing need for custom-fabricated components
- Performed Stress Analysis simulation on testing rig in SolidWorks in order to meet load requirements, ensuring safety of operation for other team members during testing process as well as vehicle operation
- Aided in building prototype of flight vehicle showcased in GoFly $1,000,000 design competition in February 2020

PROPELLANT MANAGEMENT LEAD, Ryerson Propulsion Group *Sept. 2018 - Feb. 2019*
- Spearheaded research and design efforts for design of pressure vessels for bi-propellant rocket system, facilitating completion of overall design in record three months
- Presented findings in Preliminary Design Review to engineering advisors from the Canadian Space Agency

ENGINEERING PROJECTS

DESIGN OF A COAL-GEOTHERMAL POWER PLANT
- Collaborated with peers to design a geothermal and fuel-based power plant, achieving energy needs for a population of 40,000 and optimal trade-off between efficiency, environmental sustainability, and cost effectivity
- Performed thermodynamic analyses of Rankine and Brayton cycles critical to selection of plant components, meeting energy requirements of 23 MW and allowing for future expansion of power plant if required

DESIGN OF A HOCKEY HELMET IMPACT TESTER
- Supervised design analysis process of electro-pneumatic system to simulate 3000 hits on each side of a hockey helmet within an 8-hour workday
- Performed risk assessment analysis on helmet tester design and introduced failsafe measures into electro-pneumatic system, leading to overall safer design

DESIGN OF A BALL-BEAM CONTROL SYSTEM
- Modeled ball-beam system in Simulink, simulated system responses, and obtained system responses given a varying gear angle parameter
- Designed PID system to stabilize ball-on-beam motion, obtain a settling time of 3 seconds and overshoot of less than 5%

EDUCATION

RYERSON UNIVERSITY *2017-present*
BEng. Mechanical Engineering, Mechatronics Option; Minor in Computer Science
Graduation Date: April 2022
Cumulative GPA: 3.45/4.33; Dean's List (2019-2020)

RELEVANT SKILLS

Programming Languages: Python, Java, Unix, C, C++
Simulation and CAD Software: SolidWorks, Blender, Unity, MATLAB/Simulink, PLC programming
Embedded Systems: Raspberry Pi, Arduino