

EANA HAN

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Eligible to work in: Canada, USA | Languages: English, Korean

EDUCATION

UNIVERSITY OF WATERLOO – Waterloo, ON, Canada

BASc in Honors Mechatronics Engineering with Computing Option | CGPA: 3.95/4.0 (91.2%)

Sept 2019 – April 2024

With Distinction – Dean's Honors List

- Relevant courses: Multi-sensor Data Fusion | Simulating Neurobiological Systems | Electromechanical Machine Design | Multivariable Control Systems | Robot Manipulators: Kinematics, Dynamics, Control | Autonomous Mobile Robots | Understanding Music & Brain

EXPERIENCE

ATS CORPORATION (INDUSTRIAL AUTOMATION DIVISION) – Cambridge, ON, Canada

Controls Systems Software Designer

May 2023 – Aug 2023

- Integrated and tested controls systems for automated manufacturing cells for GM's EV battery modules.
- Debugged Allen Bradley PLC ladder logic in Studio 5000 while ensuring code compliance with internal GM standards.
- Verified proper communications with the cell by reviewing electrical schematics, network diagrams, and mechanical drawings.
- Implemented FactoryTalk View HMI, set up Siemens support hardware, and conducted thorough I/O checks and safety testing.

Mechanical Designer

Jan 2023 – Apr 2023

- Conceptualized and designed mechanical components and assemblies for automated manufacturing systems in SolidWorks, focusing on optimizing designs for assembly efficiency and manufacturability.
- Collaborated with cross-functional teams to refine designs, ensuring alignment with customer requirements and performance.
- Utilized Upchain PLM and ERP software to support resource management and organization of shop floor layout.

KIRCHHOFF AUTOMOTIVE – Toronto, ON, Canada

Manufacturing Engineering Specialist

Jan 2022 – Apr 2022

- Conducted cycle-time studies of assembly line processes, implementing solutions that yielded annual cost savings of over \$20k.
- Optimized robot operations by refining weld parameters and improving robot movement sequences, enhancing line efficiency.
- Spearheaded a project to reduce weld defects by analyzing data trends and collaborating with the quality team, achieving significant cost reductions and a quick ROI.

PRO WATTS, INC. – Toronto, ON, Canada

Electrical Design Assistant

May 2021 – Aug 2021

- Developed electrical schematics for industrial applications using AutoCAD Electrical, ensuring accurate system designs.
- Conducted research and cost analysis for battery energy storage solutions, contributing to sustainable energy projects.

VIRTEK VISION INTERNATIONAL INC. – Waterloo, ON, Canada

System Quality Assurance Analyst

Sept 2020 – Dec 2020

- Improved software quality for laser projection systems by identifying and resolving over 30 critical defects through QA testing.
- Collaborated with hardware engineers to calibrate systems and validate firmware, ensuring optimal performance and accuracy.

PROJECTS

BALL AND BEAM CONTROLLER DESIGN – MATLAB, Simulink, C++, LabVIEW

- Developed a control system to track an input signal representing the target ball position using control theory within MATLAB and Simulink, ensuring the system met theoretical transient response specifications.
- Implemented the controller with C++ in LabVIEW and fine-tuned the control system to minimize overshoot and achieve fast response times, showcasing skills valuable for technology that requires precise control.

AIMING SYSTEM CONTROL DESIGN – MATLAB, Control Theory

- Designed and implemented control systems for SISO and MIMO aiming systems using MATLAB, applying control system theory.
- Derived and calculated system responses, refining the design to achieve precise control despite the base's variable position.

PILL SORTER & DISPENSER – Prototyping, AutoCAD, Robot C

- Built a proof-of-concept prototype from EV3 and laser-cut components to sort mixed pills and dispense the correct type using C.

ROBOTIC COMPOST DEHYDRATOR SYSTEM – SolidWorks, Simulation, AutoCAD | [globe](#) website

- Designed a robotic system to automate composting, performing heat transfer simulations to ensure safety constraints.
- Prototyped 3D-printed parts in SolidWorks, laser-cut components in AutoCAD, and created electrical schematics in KiCad to connect Arduino-controlled sensors via I2C.

AWARDS

Dean's Honors List (2023)

Kothari Family International Experience Award

University of Waterloo President's Scholarship of Distinction

University of Toronto National Book Award

President's International Experience Award

Dean's Honors List (2021)

Governor General's Academic Medal

Schulich Leader Nominee

SKILLS

Modelling & Design: SolidWorks | 3D Printing | AutoCAD | KiCad | Finite Element Analysis (FEA) & Thermal Analysis | Siemens NX

Software Tools: Simulink | ROS2 | Arduino | LabView | Git PLM & ERP Software | Rockwell Studio 5000 | Ubuntu | Gazebo

Programming: Python | MATLAB | C++ | C | PLC Ladder Logic

Interests: Sketching & Painting | Travel | Taekwondo (4th Dan) | Skateboard | Matcha