

# JOHN CHOI

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## Education

University of Waterloo – *B.A.Sc. Mechanical Engineering*

Sep 2023 – Apr 2028

## Technical Skills

**CAD/Simulation:** SolidWorks, CATIA V5, AutoCAD, Excel, SAP 2000, OnShape, Revit

**Certifications:** Licensed Electrician, Google PM, Industrial Biotechnology, Standard First Aid, Food Safe

**Programming Languages:** C/C++, Python, Javascript, VBA, MATLAB, HTML, CSS, Go

**Tools/Frameworks:** Node.js, Twilio, Dialogflow CX, Vapi, Cloud SDK, Langchain, Pandas

## Experience

### Metro Vancouver

Jan 2025 – Aug 2025

#### *Mechanical Project Engineer Intern*

*Vancouver, BC*

- Engineered design solutions for the **\$10B** Iona Island Wastewater Treatment Plant, supporting the transition to a renewable natural gas facility projected to cut energy costs by **40%** and offset 50,000+ tonnes of CO<sub>2</sub> annually.
- Commissioned the Iona Island **Pilot Plant**, testing lamella clarifier, CMF, and MBR units to evaluate solids removal and fouling; improved system accuracy from 70% to 99%.
- Delivered the design package for a **DC-to-AC motor** upgrade, using **CATIA V5 and SolidWorks** for 3D modeling and applying structural/thermal **FEA** to validate housings and cooling performance; integrated **VFD-driven AC systems** that improved energy efficiency by **30%** and eliminated arc-flash hazards from legacy DC equipment.
- Optimized procurement strategy and vendor coordination, reducing equipment lead times by **20%** and lowering projected lifecycle costs by **\$1.2M** through competitive sourcing and design alignment.
- Led installation of **velocity probing sensors**, implementing calibration methods that improved flow measurement accuracy by **15%** during wet-season rain events.
- Reviewed **lab test results** from staged influent and effluent sampling to track scaling, fouling, and corrosion; evaluated polymer membranes, stainless steel clarifiers, and composite components under chemical loading, confirming durability improvements that extended service life by an estimated **2 years**.

### Baja SAE Off-Road Vehicle Design

Sep 2024 – Apr 2025

#### *Dynamics CAD Member*

*Waterloo, ON*

- Assisted in the manufacturing workflow for the front suspension, including tubing fabrication, welding, and **CNC machining**, while ensuring alignment and quality through jiggging techniques.
- Designed and reviewed of the design plan for the **gear box and CVT casing**, collaborating with team members to optimize using Solidworks for manufacturability and in-house production feasibility.

### Toronto Transit Commission (TTC)

May 2024 – Aug 2024

#### *Automation Developer Intern*

*Toronto, ON*

- Engineered MPS software that graphs monthly details for **500+ on-going projects** utilizing MATLAB and VBA, achieving a **30% reduction** in the time required by project managers to analyze project data and make decisions.
- Developed a work tracking log using VBA and Python, incorporating date algorithms with **ADO** and visualizing data with **Matplotlib** to compare monthly data and provide insights, reducing calls and project costs by **\$5 million**.
- Automated workflow-generating software to replace a legacy system, receiving, analyzing, and publishing work duration to the **PM Dashboard**, reducing publish time from **8 hours to 20 seconds**.
- Received **Outstanding Achievement** (Innovation/Creativity), given to 2 of 500 co-op students for top contribution.

### Accelerate AI

June 2024 – Aug 2024

#### *AI/ML Software Engineer Intern*

*Toronto, ON*

- Customized a webhook with **Node.js, Flask, and Google Cloud** to integrate realistic human voice into a healthcare AI agent, enhancing user interaction and reducing support call duration by **50%**.
- Deployed an AI-powered digital system for an automotive dealership to handle **100+** customer inquiries, book appointments, and provide consistent, high-quality service.

### Ozz Electric & SkilledTrades BC

February 2023 – July 2023

#### *Electrician Apprentice*

*Vancouver, BC*

- Successfully integrated **wind turbine and poly-crystalline solar panels**, focusing on PCB controls, inverter and **lithium ion battery**. Installed 200-amp overhead service, circuit breaker, receptacles, and light bulbs.
- Installed 200+ electrical components for Brentwood Towers, following CEC guidelines.
- Restructured the building blueprint, calculating the optimal placement, enhancing **structural stability by 40%**.

## Projects – *Portfolio Attached*

See full list at: <https://clearoneinnovators.ca/projects.html>