John Choi

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Technical Skills

CAD/Simulation: Solidworks, CATIA, 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

Education

University of Waterloo   Sep. 2023 – June 2028
B. ASc. Honours Mechanical Engineering   *Waterloo, ON*

Experience

Metro Vancouver   Jan 2025 – Aug 2025
Mechanical Project Engineer Intern   *Vancouver, BC*

- Supported pre-design for the **$10B Iona Island Wastewater Treatment Plant**, including an RNG facility transitioning from cogeneration to boilers—improving energy efficiency by **500%** and enabling biogas sales to FortisBC.
- Deputy lead for the influent velocity measurement project and site supervisor for flow probing; also led design coordination for a **1200HP DC-to-AC motor** upgrade using VFD-driven AC systems, including **SolidWorks/CATIA modeling**, transformer integration, and power electronics (e.g., IGBTs) for precise voltage/speed control.
- Managed procurement and coordination for **90+ equipment packages**, liaising with **ABB, Caterpillar, and WEG** on specifications related to motor and VFD systems, while ensuring compliance with project standards and tracking deliverables.

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 jigging 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%.**
- Conducted a **Langchain** real-estate agency **AI chat-bot** with a knowledge base system to increase coverage by **30%**.
- Implemented features, such as providing **50+ product images**, capturing client details, and generating reports.
- Created 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 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