

# KEVIN GE

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## SUMMARY OF QUALIFICATIONS

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- Experience in PCB design, HV schematic capture, power systems, custom component design, embedded systems, microcontrollers, and test automation in power electronics applications utilizing various software applications
- Skilled in various CAD software usage and scripting in Python, C++, C#, VBS, VBA and HTML to fit custom needs
- Hardware team designer on University of Waterloo's Midnight Sun solar EV team collaborating with multiple teams, with proven leadership coordinating 110+ volunteers across nonprofit projects raising \$2,500+ for charity

## EDUCATION

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### University of Waterloo

Waterloo, ON

*BASc. Honors Electrical Engineering*

## EMPLOYMENT HISTORY

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### Electrical Engineering Design Co-op

Jan. 2026 – Apr. 2026

*S&C Electric*

*Toronto, Ontario*

- Designed new scripts and tools to help automate the design process in CAD software using VBA, VBS, HTML, and C#
- Developed, maintained, and updated legacy code systems to reintroduce outdated tools back into the workflow
- Utilized E3, and Microstation to draw single line and 3 line schematics for custom HV electrical components
- Leveraged and created Excel and 3DX macros to efficiently store and retrieve data within large datasets and libraries
- Created educational documents for the team to better understand modern electrical codes such as IEC 61850

### Piano Teacher

Dec. 2023 – Present

*RS Music*

*Calgary, AB*

- Delivered personalized instruction to 150+ students across all ages and skill, building mentorship and communication skills
- Developed adaptive lesson plans and consulted with families on curriculum, instruments, and long-term progression strategy

## RELEVANT EXPERIENCE

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### Hardware Design Team Member

Oct. 2025 – Present

*Midnight Sun Solar Rayce Car Team*

*Waterloo, Ontario*

- Designed and simulated multiple 2-layer PCB's with schematic integration and optimized component placement
- Utilised custom libraries and conducted DRCs to ensure compliance with safety and manufacturing standards
- Enhanced circuit efficiency through component selection, power calculations, and manufacturability considerations
- Documented design process and safety considerations in technical reports for future iterations and team knowledge transfer

## PROJECTS

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### Custom "Homepod" Device | *AutoCAD Electrical, Soldering, Excel, Python, C*

Nov. 2025 – Jan. 2026

- Developed a device able to recognise voice commands and perform household functions such as temperature regulation
- Optimized circuit design, sensor compatibility and integration, and power regulation to reduce energy inefficiency
- Collaborated with software engineer to troubleshoot integration issues, applying debugging techniques to ensure reliability
- Produced CAD schematics and technical documentation for replication and future development

### ATSimulator | *Typescript, Python, Claude Code, Codex, React, Power Systems*

Mar. 2026 – Present

- Developed a browser-based Automatic Transfer Switch simulator using React and TypeScript, featuring a graph-based circuit engine that computes energization paths, breaker state logic, and open/closed/fast transfer sequences in real time
- Engineered a CAD-style topology editor with snap-to-grid placement, orthogonal wire routing, and port-aware rotation
- Optimized engine to decouple time from clock time, supporting playback speed from 0.05x to 5x
- Implemented a connectivity solver using BFS flood-fill, to model breaker interlock logic, sync-check gating, undervoltage pickup delays, and automatic retransfer sequencing

## TECHNICAL SKILLS

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**Hardware/Design:** PCB Design (Altium), Circuit Design, Breadboarding, AutoCAD Electrical, Microstation, Zuken e3

**Programming:** Python, C++, C#, C, VBScript, VBA, ML pipeline, HTML, JavaScript, Claude, Codex, CSS, React, SQL

**Software:** Microsoft Office (Excel, Word, PowerPoint), Arduino Uno, Sharepoint, Teams, Claude Agents

**Professional:** Leadership, Public Speaking, Mentorship, Technical Writing, Collaboration, Electrical Codes