Caden Chan

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Highlights of Qualifications

- Hands-on ECAD and MCAD experience using KiCad, Altium Designer, PSpice, Autodesk Inventor and Fusion360
- Proficient in programming in Python, C and C++, with working knowledge of Java, Javascript, HTML and CSS.
- Knowledgeable of programming frameworks Django, Flutter, Flask
- Strong collaboration skills, with the ability to express thoughts clearly, actively listen to others and collectively discover solutions
- Committed to continuously acquiring new knowledge and developing myself both professionally and personally
- Empathetic, resilient, self-aware, and motivated individual

Education

McMaster University   Sept. 2023 - June 2028
Bachelor of Engineering in Electrical and Biomedical Engineering   *Hamilton, ON*
- The Anna Marie Hibbard Scholarship, Provost's Honour Roll 2024
- Relevant course topics: Circuit analysis, semiconductor devices, electromagnetism, logic design, circuit verification with an oscilloscope

Experience

Low Voltage Electronics Team Member | *MAC Formula Electric*   Sept. 2024 - Present
Relevant technologies: Altium Designer, Microsoft Visio   *Hamilton, ON*
- Designing a CAN HAT for a Raspberry Pi using **Altium Designer** to enable CAN bus communication capabilities with the rest of the vehicle's electrical system.
- Developing schematics and block diagrams to sustain documentation of the vehicle's electrical architecture.
- Taking ownership of the team's Brake System Plausibility Device, leading testing with other team boards and ensuring preparedness of the device for competition.
- Collaborating with team leads to facilitate the manufacturing, testing and troubleshooting of LV and HV printed circuit boards (PCBs), using a multimeter, oscilloscope and power supply to debug sources of error.
- Supporting the manufacturing team in various tasks, such as preparing carbon fiber panels for resin infusion and sanding body shell molds for the vehicle.

Assistant Teacher | *Spirit of Math Schools*   Sept. 2019 - June 2023
Transferable skills: Leadership, communication, problem-solving   *Markham, ON*
- Engaged with teachers to develop strategies that encourage a friendly learning environment and stimulate a desire for learning, coordinating classes of 20-30 students in Grades 3-11.

Projects

AutoChessboard | *Personal Project*   May. 2024 - Sept. 2024
- Worked closely in a team of 2 to design an automated system of **ESP32**-controlled dc motor cars that magnetically move chess pieces from the underside of the board.
- Designed and tested several two layer PCBs using **KiCad** to allow interfacing between the ESP32, a matrix of hall effect sensors, rows of PNP transistors and several other electrical components, used to detect the position of pieces on the chessboard.
- Developing, simulating and testing a dynamic multi-agent pathfinding algorithm in **Python** to inform the movement of the cars while avoiding collisions.

Youtube Academy | *Google Developer Student Clubs Hackathon at McMaster University*   Feb. 2024
- Led development of a web platform using **Flutter** and **YoutubeAPI** for curating informational Youtube content
- Advocated for accessibility in education in a team of 4, showcasing our platform at the GDSC McMasterU Solution Challenge Hackathon

Sumobot | *Sumobot Competition at McMaster University*   Oct. 2023 - Jan. 2024
- Prototyped and designed an autonomous sumo robot in a team of 4 using **Arduino** and **Autodesk Inventor** and electronic sensors, to compete at McMaster's Beginner Sumobot Competition.