

Kate Aiken

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EDUCATION

Queens University <i>Bachelor of Applied Science, Studying Mechatronics and Robotics Engineering</i>	Kingston, ON Sept 2024 – Present
Trafalgar Castle School <i>High School Diploma, Grade 6 – 12</i>	Whitby, ON Sept 2017 – Jun 2024

EXPERIENCE

Systems Integration Director & Electrical Engineer <i>aQuatonomous, Queens University</i>	Sept 2024 – Present Kingston, ON
<ul style="list-style-type: none">Designed and built an Autonomous Surface Vehicle (ASV) to take to competitionConnected software, electrical, hardware and communication systems on the ASVManaged a ground station and controlled the ASV's position through GPS direction or autonomy modeSet up the telemetry systems and perform calibration and tuning for an accurate performance	
Optimist Race Coach & Sailing Instructor <i>The Boulevard Club & Lake of Bays Sailing Club</i>	May 2023 – Present Toronto, ON
<ul style="list-style-type: none">Designed and implemented spring and summer training programsCoached at local and international regattasIntroduced and trained younger sailors to raceElevated skills of experienced sailors resulting in numerous fleet wins and podium placingsPerformed boat and sail maintenance including the set up of 6 brand new boats	
Head Engineer <i>MATE Robotics, Trafalgar Castle School</i>	Sept 2021 – June 2024 Whitby, ON
<ul style="list-style-type: none">Designed and built a Remote Operated Vehicle (ROV) to perform underwater monitoring and protection tasksWorked with all sub teams to integrate all mechanical, hardware and electrical componentsDesigned and built the electrical setup including circuit diagrams, soldering and testingCoded the custom printed controller in C++Assisted the pilot as the co-pilot to design a mission plan, review and adjust strategy and perform calculations based on data collection	

PROJECTS

Morse Code Sender and Receiver <i>VS Code, C++, Circuit Design, Arduino</i>	Jan 2025 – Apr 2025
<ul style="list-style-type: none">Designed and coded a module to translate, send and receive morse code messagesIntegrated code with hardware including an LCD screen to as well as an audible and visual signal to output a received message	
Automated Pre-Treatment Water System Prototype <i>Arduino, C++, SolidWorks</i>	Sept 2024 – Dec 2024
<ul style="list-style-type: none">Wrote code in C++ for an Arduino to read sensors and control pumps to cycle water through a filter systemDesigned a mixing bar in SolidWorks to be 3D printed and integrated into the designAssembled, tested and troubleshooted the final prototype	
Fluidized Air Bed <i>Mechanical Design, Testing and Troubleshooting</i>	Apr 2024 – May 2024
<ul style="list-style-type: none">Designed and built a fluidized air bed to demonstrate the physics and applications	
Super Sink <i>Mechanical Design, Research, Assembly and Testing</i>	Sept 2023 – Dec 2023
<ul style="list-style-type: none">Designed and built a sink that recycles the water to provide clean water with only electricity	

SKILLS

Technical: Java, Python, C/C++, VHDL, SolidWorks, Arduino, Microsoft 365, Git, VS Code, Jupyter
Hands-on: Soldering, Circuit Design, PCB Design, Troubleshooting, System Design and Integration
Soft: Organization, Creativity, Problem Solving, Leadership, Mentoring, Curiosity, Troubleshooting