

# Andrew Zhang

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## HIGHLIGHTS

- ❖ 16 months of mechanical design and hands-on installation experiences at a hydrogen electrolyzer startup creating a gas coil manufacturing machine and piping arrangements.
- ❖ Strong leadership skills gained from leading a robotics student design team, successfully achieving major project installations on-time through dynamic collaborative efforts.
- ❖ Possesses a curiosity-oriented growth mindset that constantly seeks innovation opportunities.

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## EDUCATION

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| <b>University of Toronto</b><br><i>Masters of Engineering, Robotics Emphasis</i> | <b>Sept. 2023 – June 2025</b> |
| <b>University of Toronto</b><br><i>Bachelors in Mechanical Engineering</i>       | <b>Sept. 2018 – June 2023</b> |
| ▪ <b>GPA: 3.64/4.0</b>   |                               |

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## WORK EXPERIENCE

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| <b>New Product Development for Green Hydrogen Electrolyzers</b><br><i>Mechanical Engineering Internship at Hydrogen Optimized</i>   | <b>May 2021 – Sept. 2022</b> |
| <ul style="list-style-type: none"><li>▪ Designed a cost-effective manufacturing machine for gas cooling coils, reducing coil production costs by 50% compared with outsourcing to local machine shops.</li><li>▪ Created functional decompositions, CAD models, and weld drawings for the manufacturing machine using Autodesk Inventor, enabling precise fabrication of the machine prototype within 0.1mm tolerances.</li><li>▪ Created piping arrangements for an electrolyzer test workshop by analyzing and sizing pipes based on gas flow rates, enabling the validation of 3 new electrolyzer design concepts.</li></ul> |                              |

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## RELEVANT PROJECTS

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|--|------------------------------|
| <b>Low-Cost Endoscope Research Project</b><br><i>Research Assistant at Medical Computer Vision and Robotics Lab, University of Toronto</i>   | <b>May 2024 – Sept. 2024</b> |
| <ul style="list-style-type: none"><li>▪ Designed a low-cost tool for surgical stereo imaging at a cost 30 times less expensive compared to current commercial stereo endoscope systems.</li><li>▪ Created design improvements for further enhancing the low-cost tool, achieving a 20% enhancement in color accuracy by reducing interference from ambient light.</li><li>▪ Utilized 3D printing to create a prototype and achieve concept validation of design improvements within 1 day.</li></ul>   |                              |
| <b>Mechanical Executive for Autonomous Robotics Team</b><br><i>Design Leader for UTRA Robotics Student Engineering Team</i>  | <b>Sept. 2022 – May 2023</b> |
| <ul style="list-style-type: none"><li>▪ Developed a weatherproof enclosure for protecting the electronics of an outdoor autonomous robot, using design for serviceability principles to decrease electronics maintenance time by 30%.</li><li>▪ Coordinated the construction of the waterproof enclosure within a team of 6, writing a clear installation procedure to ensure an efficient, high-quality process adhering to design specifications with minimal delays.</li><li>▪ Prepared weekly meeting agendas, ensuring clear communication of tasks and priorities within the team.</li></ul> |                              |

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## SKILLS & SPOKEN LANGUAGES

- **Skills:** CSWP Certified SolidWorks professional, 3D Printing, MATLAB, Python, ANSYS, Presenting
- **Spoken Languages:** English (Native), French (Proficient), Mandarin Chinese (Conversational)