Jason Chen

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EDUCATION & CERTIFICATES

UNIVERSITY OF PENNSYLVANIA Class of 2026
Master of Science in Mechanical Engineering – Mechatronic and Robotic Systems GPA: **4.0**/4.0
Relevant Courses: Design of Mechatronic Systems, Introduction to Robotics, Finite Element Analysis, Machine Learning, Distributed Robotics, Materials and Manufacturing for Mechanical Design, Integrated CAD design

UNIVERSITY OF ALBERTA Class of 2024
Bachelor of Science in Mechanical Engineering Co-op - Plan IV GPA: **3.9**/4.0

CERTIFICATES
Certified SOLIDWORKS Professional (CSWP), Fundamentals of Engineering Mechanical

TECHNICAL SKILLS

Computer Aided Design (CAD) & Simulation: SolidWorks | Star-CCM+ | DaVis | COMSOL | URDF Modeling
Programming: Python | MATLAB | Simulink | C | ROS | Google Colab | Git | Linux | SMath Studio
Manufacturing: 3D printing (FDM) | Laser cutting | Injection molding | Polyurethane casting | Composite fabrication
Automation/Data Visualization: SharePoint | Power BI | Power Apps | Power Automate | MS Office

WORK EXPERIENCE

University of Pennsylvania, GRASP Laboratory, Figueroa Robotics Lab April 2025-Present
Graduate Research Assistant Philadelphia, Pennsylvania

- Designed and prototyped two dual-mode robotic systems with 4-DOF per arm capable of both precision manipulation and dynamic locomotion: rigid joint-based system with custom universal joints and servo mechanisms, and cable-actuated continuum arm with distributed motor control and flexible vertebrae.
- Engineered innovative actuation systems including timing belt transmission with bevel gear coupling for universal joints, and cooperative cable control where adjacent motors jointly actuate spine segments for enhanced redundancy.
- Developed compliant 3-finger gripper with worm gear reduction and spring-based adaptive control, enabling seamless transitions between delicate manipulation and robust ground contact support.

ATCO Ltd., Natural Gas Division Sep 2022 – Sep 2023
Project Services Engineering Intern Edmonton, Alberta

- Engineered automated workflow solutions using Microsoft Power Platform (Power Apps & Power Automate), transforming manual processes into digital applications with 85% reduction in processing time.
- Supervised and mentored 4 engineering interns, implementing standardized documentation protocols for 20+ projects.
- Performed cost analysis with Primavera P6, optimizing supply chain and scheduling for $15M+ capital projects.
- Designed metadata-driven SharePoint system, reducing document retrieval time by 70% for 20+ project teams.

University of Alberta, Advanced Composite Material Engineering Group Jan 2022 – Sep 2022
Research and Development Assistant Edmonton, Alberta

- Engineered a prototype long-range vaccine cold box achieving -78.5°C to 8°C temperature maintenance for COVID-19 vaccine transportation in Mozambique (prototype was field tested in Mozambique in 2023).
- Performed finite element analysis (FEA) and thermal simulations in SolidWorks to optimize material selection and structural integrity under 1-meter drop test conditions.
- Fabricated prototype using polyurethane casting with glass bead reinforcement and developed specifications for injection molding scale-up.
- Executed WHO-compliant thermal testing protocols in environmental chamber, achieving 168-hour cold life.

PROJECT EXPERIENCE

Capstone Project – Autonomous Mobile Robot (AMR) Platform Jan 2024 – Apr 2024
Project Manager Edmonton, Alberta

- Led a team of 5 graduating engineers in designing an AMR platform supporting a 6-DOF Yaskawa GP-50 robotic arm for industrial metal additive manufacturing.
- Designed tracked mobility system capable of 2-ton payload, 15% grade traversal, and extreme temperature operation (-40°C to 30°C) with 6-hour runtime.
- Conducted FEA analysis using SolidWorks to validate structural integrity with ≤160-microns end-tool deflection and maximum stress of 62 MPa (safety factor of 5.7).

Mario Kart Transmission Design Project May 2021 – Aug 2021
Mechanical Team Member Edmonton, Alberta

- Designed a 5-speed + reverse sequential dog-clutch transmission system for high-speed racing applications.
- Calculated bearing load ratings, spline/keyway stress distributions, and torque transmission paths using analytical and computational methods.
- Specified material properties and tolerance requirements (±0.2mm) for precision components to ensure durability.