Ben Rohu (He/Him)

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EDUCATION

University of British Columbia **Expected Graduation: April 2029**

Bachelor of Applied Science – Mechanical Engineering

- Co-op Availability: 4 or 8 months beginning May 2027

TECHNICAL SKILLS

CAD: SolidWorks, Fusion, AutoCAD
Programming: C, Java, Python, MATLAB, Arduino IDE
Manufacturing: Water jet, Milling, Lathe, 3D Printing, Hand Tools

ENGINEERING DESIGN TEAMS

UBC Formula Electric | Vancouver, BC September 2025 - Present

Drivetrain Sub-Team Member

- Member of a 100+ student team designing and building a fully electric Formula-style race car for the international FSAE competition
- Designed and manufactured a rules compliant catch can (SolidWorks, 3D printing, waterjet), recognized by an FSAE technical judge as the most compliant inspected
- Identified high pressure drop & inverter overheating risk in previous single-loop liquid cooling system, then redesigned it into separate motor/inverter loops, reducing pumps used from three to two, and meeting thermal limits for all components
- Validating flow rate, pressure drop, and temperature performance across both cooling loops through benchtop and vehicle testing

TECHNICAL PROJECTS

Harmonic Drive Gearbox | Personal Project September 2026

- Designed a harmonic drive gearbox in Solidworks with a 50:1 reduction for a Nema 17 stepper motor for use in future projects
- Achieved a fully non-back drivable output with near zero backlash despite almost entirely 3D printed construction
- Fixed flex spline deflection issues during prototyping by switching to a more flexible and fatigue resistant material

Pen Plotter | Personal Project July 2026 - Present

- Designed a two-axis pen plotter mechanism in SolidWorks, using rack-and-pinion gearing driven by stepper motors to convert rotational motion into precise X-Y movement
- 3D printed most components, iterating on tolerance issues for smooth motion along both axis
- Currently developing motor control firmware & drawing logic to convert image to toolpath

VEX “High Stakes” Robot | Burnaby Central Robotics Club July 2024 – February 2025

- Designed the full robot CAD in Protobot, from initial design concept to final assembly
- Independently built the first working prototype, validating systems & identifying potential areas for improvement
- Refined and rebuilt the final competition design in collaboration with teammates
- Placed first of 60 in the qualifying bracket of PYRS Robotics Competition, reached quarter finals
- Won the PYRS Robotics Competition Design Award, judged on overall robot design, presentation of subsystems, and documentation of our design process

Robotic Arm | Personal Project May 2025 - June 2025

- Designed a 3-DOF robotic arm (base, shoulder, elbow) in Fusion with a servo-actuated gripper
- Implemented four potentiometers as manual control inputs
- Programmed on Arduino IDE to read real-time control inputs from potentiometers and drive corresponding stepper/servo motors

WORK EXPERIENCE

Canadian Tire | Burnaby, BC — July 2025 - October 2026

Flex Floor Associate

- Provided customer service across multiple departments, assisting customers with product selection and resolving issues in a fast-paced environment
- Assisted in training new associates on store procedures and customer service expectations

BC Soccer Association | Burnaby, BC — May 2022 - May 2025

Referee

- Officiated youth soccer games across all skill levels, making high-pressure decisions on the spot
- Managed conflict between players, coaches, and spectators while maintaining composure and fair judgement

VOLUNTEER EXPERIENCE

Burnaby Central Robotics Club | Burnaby, BC — January 2024 - June 2025

President

- Led over 30 members through design, build, and competition phases of the season, coordinating schedules and project timelines to meet competition deadlines
- Managed club budget and sponsorship/fundraising efforts to fund parts, tools, and competition costs
- Mentored newer members in the engineering design process, CAD, and robot building techniques while leading my team to the first two competition awards in club history

Burnaby School District | Burnaby, BC — June 2023

Teacher Assistant

- Supported the teacher in delivering VEX IQ robotics and beginner coding lessons to grade 6/7 students
- Provided hands-on assistance during robot build and coding activities, helping students troubleshoot issues and understand the basics of robotics
- Adapted explanations and support to accommodate a range of skill levels and learning paces among students

AWARDS

Top Physics 12 Student | Burnaby Central Secondary School — 2025

- Class of 350+ students

Top AP Computer Science A Student | Burnaby Central Secondary School — 2025

- Class of 350+ students

Award of Excellence, Drafting & Design | Burnaby Central Secondary School — 2022 & 2024