Brandon LAM NGAN CHAN **Mechanical Engineering Student**

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Energetic 4th year Mechanical Engineering student seeking the opportunity to gain more hands-on work experience. Skilled at 3D CAD modelling, drafting technical drawings, running simulations and analyses including FEA and MATLAB. Great at collaborating with others, project management and working under pressure and short time frames to achieve the best results.

SKILLS

Skills: SolidWorks, AutoCAD, ANSYS Benchwork FEA, CAM, Machining, Waterjet Cutting, C, Python, CSS, HTMLMATLAB, Arduino IDE, VBA Excel, Microsoft Office (Excel, Word, PowerPoint)
Languages: English, French, Mauritian Creole

EDUCATION

University of British Columbia (UBC), Vancouver **May 2027**
Bachelor of Applied Science (BASc) – Mechanical Engineering, Flex Option

- Awards: Outstanding International Student (OIS) award (Top 10%), Dean's List W2022 – W2025 (>80% average)

PROFESSIONAL EXPERIENCE

FortisBC, Surrey, BC **May 2024 – Dec 2024**
Pipelines Mechanical Engineering Co-op

- Assessed advanced **150+** pipeline vehicular and utility crossings to validate pipeline integrity and internal pipeline stresses as per CSA regulations.
- Created engineer-specific templates to model pipeline integrity and pressure management.
- Designed IFC, As-built and Record drawings for pipeline project designs including Horizontal Directional Drilling (HDD), bridge crossings, valve replacements, and more.
- Developed an auto-updating project tracking system through VBA scripts and GIS to streamline pipeline crossing assessments and manage pipeline integrity through In-Line Inspection (ILI) data.

Pro-Five Ltd, Ebene, Mauritius **May 2023 – Jul 2023**
M&E Consulting Engineering Intern

- Designed technical CAD layouts for plumbing, HVAC and electrical systems using AutoCAD, for 10+ projects.
- Implemented energy audit report at a denim factory, enhancing energy savings efficiency by **~10%**.
- Conducted HVAC survey analysis and design layout calculations using Carrier HAP to determine areas of highest energy losses and feasibility of design and asset installation.
- Completed arithmetic checks of BOQs and BOMs for finalizing tender reports for 10+ projects to determine most optimal tender propositions.

ENGINEERING STUDENT TEAM

UBC Supermileage, UBC, Vancouver **Sept 2023 - Present**
Vehicle Mechanics, Steering Project Lead

- Led a 5-person team to design a new Ackerman rack-and-pinion steering mechanism for the Battery Electric Urban vehicle, reducing the effects of rolling resistance by **40%**.
- Conducted MATLAB and FEA stress loading analyses on steering blocks to improve shear strength.
- Redesigned and manufactured new carbon-fiber composite wheel covers and hub housings for maximum weight savings for the Hydrogen Fuel Cell Prototype vehicle.
- Improved efficiency of vehicles, resulting in an overall 5th place finish at the Shell Eco-Marathon Americas 2024.

PROJECTS

Remote-Rough Terrain Vehicle, UBC, Vancouver **Jan 2024 – Apr 2024**
RC vehicle made from wooden chassis, PLA-printed and servo-operated gearbox, steering and braking mechanism designed to race through obstacles and hills. Vehicle later redesigned to extinguish fires through multidirectional hose and water tank.

- Designed and manufactured a servo-operated, dual-axis water aiming and shooting system reaching up to 5m.
- Designed a 3D-printed rack-and-pinion steering mechanism, offering Ackerman steering to reduce friction losses.
- Conducted MATLAB analyses to design 2-speed, 20:1 and10:1 gearbox; fastest vehicle in the competition.