FELIPE DIAZ VARGAS

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I'm a driven engineer with a passion for clean technology, sustainable energy, and innovative problem-solving. I combine hands-on design experience, unwavering curiosity, and a global perspective to deliver impactful, future-focused engineering and strategy.

EDUCATION

University of British Columbia — **Vancouver, BC**
Bachelor of Applied Science in Integrated Engineering, Mechanical major & Electrical minor — *December 2025*

UNIVERSITY OF SYDNEY — **Sydney, Australia**
Coordinated International Exchange (CIE), Mechanical Engineering — *Jul 2024 - Dec 2024*

PROFESSIONAL EXPERIENCE

Vancouver Water Adventures — **Vancouver, BC**
Jetski Tour Guide — *May 2025 - Aug 2025*
- Conducted Jetski tours in Vancouver, leading up to 21 jetskis and delivering an unforgettable on-water experience
- Ensured on-water safety through hazard recognition and proactive risk management practices.
- Performed weekly maintenance and mechanical troubleshooting to maximize equipment reliability.

Miru Smart Technologies — **Vancouver, BC**
Development Engineering Co-op — *Sep 2023 - Apr 2024*
- Executed multiple mechanical engineering projects from consultation through to installation and commissioning
- Designed and optimized mechanical systems using SolidWorks, managing revisions with SolidWorks PDM
- Managed BOM creation, hardware sourcing, and development of SOPs and maintenance plans
- Managed an 8-month, $150,000 research grant, delivering monthly external reports and bi-weekly internal meetings.

Ledcor — **Burnaby, BC**
Project Controls Engineer Co-op — *May 2023 - Aug 2023*
- Completed site-wide daily reporting; documented construction progress, delays, personnel changes, etc.
- Filed and secured approval on change orders up to $200,000 due to unforeseen construction challenges
- Adopted a safety-first mindset by undergoing rigorous safety trainings, Ledcor's #1 priority in all operations

UBC Faculty of Integrated Engineering — **Vancouver, BC**
3D Printing Shop Manager — *Mar 2023 - Dec 2023*
- Gained expertise in additive manufacturing, specifically FDM and resin 3D printing
- Tested and optimized printer settings; developed intuition for printability of complex geometries
- Oversaw student rapid prototyping requests, engaging in customer consultation and ensuring timely part delivery

TECHNICAL PROJECTS

Personal Website — *May 2025 – Present*
Personal Project - www.felipediazv.com
- Built a modern, responsive personal website using HTML, CSS, and JavaScript.
- Showcases professional portfolio, **blog on multidisciplinary research**, and an interactive life timeline
- Implemented GitHub Pages hosting, version control, and modular design for scalability.
- Optimized the use of AI LLMs to streamline coding workflows and obtain high-value solutions for website development

Checkmate — *Sep 2024 – Apr 2025*
4th Year Capstone, UBC
- Designed and built a robotic chessboard merging traditional gameplay with automated, computer-driven movement
- Optimized piece motion through electromagnet testing and construction of a thin (3mm), low-friction playing surface
- Assisted in the design and build of the H-Bot gantry, establishing stepper motor control with Universal G-code Sender
- Voted **best 4th year capstone project** by faculty, peers and the public

Helmet Heads-Up Display *Sep 2022 – Apr 2023*

3rd Year Group Project, UBC

- Constructed a helmet-mounted, augmented-reality, heads-up display for an electric racing kart
- Engineered the near-eye display (NED) module with exhaustive optical physics research.
- Fabricated the opto-mechanical system, including the optical combiner, lensing, and NED casing.
- Conducted rigorous tests using a custom rig to ensure a clear, readable display without eye strain.

Autonomous Water-Testing RC Boat *Dec 2021 – Apr 2022*

2nd Year Group Project, UBC

- Utilized SolidWorks to design an optimized catamaran hull informed by naval architecture research.
- Spearheaded fiberglass hull manufacturing (82×64×22 cm) using a 3D-printed negative mold.
- Assembled electro-mechanical components; validated navigability via repeated watertightness tests.
- Voted **best 2nd year capstone project** by faculty, peers and the public

SKILLS & EXPERTISE

Prototyping: 3D Printing | Power Tool Expertise | Composite Fabrication | Microcontroller | Laser Cutting | Waterjet
Computer: SolidWorks | Finite Element Analysis | ANSYS | C/C++ | MATLAB Analysis | Microsoft Office
Languages: English | Spanish | Portuguese | French

COURSES, CERTIFICATIONS & CONFERENCES

Wilderness First Responder – 80-Hour First Aid *May 2025*

- Advanced proficiency in emergency care, including trauma response, patient monitoring, and stabilization
- Qualified in administering epinephrine, managing severe asthma, and providing BLS CPR with oxygen and AED use

Introduction to Fusion Energy and Plasma Physics - Princeton Plasma Physics Laboratory *June 2024*

- Completed an intensive course on plasma physics and fusion energy sciences, covering magnetic confinement, plasma-material interactions, and computational modelling.
- Engaged with experts to gain comprehensive insights into fusion technology advancements and its commercialization.

Tech Stewardship Practice Program *May 2024*

- Developed expertise in applying ethical, inclusive, and sustainable practices to technology development, driving responsible innovation and career growth.

Conference on Sustainability in Engineering (CSE 2023), UBC *February 2023*

- Attended a national conference on engineering sustainability, enhancing the engineering design process with concepts of two-eyed seeing, co-creation, and decolonization through case competitions, panels, and workshops.