

Arif Janmohamed

Mechanical, Manufacturing, and Materials Engineer

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[Portfolio Site](#)

TECHNICAL WORK EXPERIENCE

Tesla Motors, May 2023 - May 2024

Equipment Engineering Intern, Cell Development Lab

- One of five equipment engineers enabling the research and development work of Tesla's Cell Development Lab with custom designed in-house equipment as well as modified vendor equipment for electrode and cell manufacturing, QC, and testing
- Developed novel cell dissection analysis tool and software from the ground up, enabling vast improvement to dissection data quality and consistency
- Led external vendors through design scaling and commissioning of above dissection analysis tooling to bring my work to five additional Tesla teams throughout the US, creating new benchmark for cell dissection analysis company-wide
- Continually led projects from conceptual design through to in-house and external manufacture, assembly, documentation, training, release to lab technicians, and support
- Spearheaded novel process improvements improving cell yield by up to 40%
- Engaged technicians in ergonomic design projects to increase efficiency, comfort, and process repeatability across our lab

GluxKind Technologies, May 2022 - September 2022

Mechanical Engineering Co Op

- One of four mechanical engineers designing and manufacturing a unique level 3 self-driving electric stroller prototype with in-house carbon fiber construction
- Overhauled handlebar design to improve ergonomics and reduce cross-sectional area by 35% while incorporating two load cells for pushing force detection, resin-cast led communication bars, haptics, autonomy button, and rear camera for parent facial and gestural recognition
- Further refined handlebar design to optimize for injection molding and streamline for assembly
- Conducted load testing of carbon fiber parts and manufactured handlebar PCBs
- Created animations and renders of our stroller in Blender, featured on website, socials

UBC Integrated Engineering, August 2021 - May 2023

Shop Supervisor, 3D Print Shop Manager

- Maintained \$300K of equipment including: Tormach 1100MX CNC mill with ATC, manual knee mill, lathes, CO2 laser cutter, waterjet cutter, and welders in our 24/7 student-run shop
- Led specialized trainings in CAM toolpath generation and machining, welding techniques, and general shop safety to provide shop access to 120+ students
- Operated, serviced, and upgraded fleet of 10 SLA and FDM printers year-round
- Collaborated with head shop supervisor to develop curriculum and testing for trainings as well as safe work procedures and intuitive guides for shop tools

DESIGN TEAM EXPERIENCE

Formula UBC Racing, August 2022 - August 2023

Subteam Lead, Materials and Manufacturing (8-Person Subteam)

- Advocated for a dedicated manufacturing subteam, and was appointed as new subteam lead
- Responsible for guiding and supporting materials research, testing, and manufacturing process development projects of 6 subteam members
- Led weekly learning sessions on hands-on manufacturing topics like CNC toolpath generation, workholding, composite layup, 3D printing techniques, mold design principles, etc
- Advised other subteams on Design for Manufacturing, as well as optimal materials and

SKILLS

Mechanical:

- Mechanical Design and FEA in Solidworks and Fusion 360
- DFM and DFA
 - Design for layup, injection molding, additive and subtractive manufacturing
- Accomplished Technical Sketching and visual communication skills
- Jigging, mechanical test fixturing and DOE for destructive testing

Manufacturing:

- Experience working with international manufacturing teams for machining as well as full machine design, assembly, testing, and distribution
- 3 and 4-axis CNC machining experience with HSMworks CAM
- Extensive Resin and FDM 3D printing, diagnostics, and tuning
- PCB, DIN-rail industrial, protoboard, and breadboard Electrical Assembly
- Laser, Waterjet, and Plasma cutting
- All Welding Techniques
- Confident and competent in any machine, metal, or woodshop

Materials:

- Carbon Fiber Mold design, manufacturing, and layup strategy
 - Aluminum, foam, and MDF molds
 - Mainly prepreg, vacuum bagging, and oven or autoclave curing
- Destructive Composites Testing and microscopy

Software:

- Python with a focus in image compositing, processing, and machine control programs and GUIs
- PLC Programming, Ignition, and MODBUS industrial communications
- JIRA, Monday, Notion for Project Management
- Visual design in Adobe Creative Cloud
- Experience in C, C++, C#, HTML, CSS, Blender, Unreal Engine, and Unity

- manufacturing processes through consultation meetings before test and final manufacturing
- Developed a robust system for requesting consultations and preparing detailed manufacturing requests using Project Management software Monday.com
- Responsible for manufacturing carbon fiber steering wheel - developed and refined manufacturing process, performed mechanical testing and validation, diagnosed layout issues

Formula UBC Racing, September 2020 - August 2022

Member, Driver Controls and Ergonomics (6-Person Subteam)

- Redesigned and machined aluminum brake pedal using FEA to deliver 230% higher torsional stiffness and reduce maximum stress by 240 MN/m² at equivalent weight
- Led brake temperature sensor implementation to prevent rotors from overheating in endurance event and allow for dynamic performance adjustment
- Implemented brake overtravel detection to improve driver and car safety
- Designed and manufactured new carbon fiber pedal faces and heel plate
- Produced research and prototype of new pedalbox design featuring both electronic throttle control and compression-molded carbon fiber construction

SELECTED TECHNICAL PROJECTS

ReMold Programmable Composite Mold, October 2022 - April 2023

Team Founder and Member (5 team members, 3rd year design project)

- Pitched and founded team to develop new tool for fast, flexible, reusable, and programmable composites mold for prototype development
- Responsible for mechanical system design - developed pin-actuated numerically controlled membrane for curved composite panels
- Designed and built electromechanical pin actuation system and 3-axis CNC gantry

And More! Custom PC case design + liquid cooling, 4×4 ft 3D printed

CNC plotter, lighting design and electronics, FRC Robotics, CNC-molded gingerbread house, jewelry design, line-following robot... [**View my Portfolio Site!**](#)

ACADEMICS

University of British Columbia

Bachelor of Applied Science in Integrated Engineering '20-'25

Major: Mechanical

Minor: Materials, Manufacturing

Beedie Luminaries Scholar

'20-'24

Full-ride scholarship for 4 years of study

DESIGN AWARDS

CES Innovation Award

GluxKind Ella - '22

Integrated Engineering Best Design Award

ReMold - '23

INTERESTS AND ACTIVITIES

- Drawing, painting, printmaking
- Cooking
- Lighting Design
- Visual effects and 3d rendering
- Street photography
- Short filmmaking
- Fashion Design