Mark Van Genderen **Electrical Engineering Student**

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TECHNICAL SKILLS

Lap Equipment
- Oscilloscope
- Signal Generator
- Multimeter
- Analogue Circuits
- Standard Hand/Power Tools

Software Tools
- Altium
- Visual Studio
- Android Studio
- IntelliJ
- Git
- ModelSim
- Quartus Prime
- SolidWorks

Programming
- C
- Java
- Kotlin
- SQL
- Embedded Programming
- Javascript (HTML, CSS)
- Assembly
- Verilog

EDUCATION

University of British Columbia **December, 2023**
Bachelor of Applied Science - Electrical Engineering, Minor in Computer Science
Cumulative Average: 83.6%
Signals and Systems: 87%
Introduction to Computer Systems: 90%

TECHNICAL PROJECTS

DC to DC Buck Converter (Individual Project for Thunderbikes) **August, 2021**
github.com/mark-van/dc-dc-buck-converter-pcb
- Designed buck converter circuit to efficiently step-down voltage for peripheral components
- Printed PCBs after employing Altium in creating a PCB designed to suffer minimal temperature rises and that complies with a manufacturer's capabilities

Cookie Break App (Personal Project) **July, 2021 – August, 2021**
github.com/mark-van/cookie-break
- Developed local database, persistent preferences, and thoughtful user experience to produce an Android app that tracks user cookie eating habits

Launch (Udemy Class Project) **June, 2021 – July, 2021**
- Completed an interactive live streaming web application to display personal electronic projects
- Utilized MongoDB/Mongoose to model and EJS to display data for messaging functionality

DOGE Crypto Bot (Personal Project) **July, 2021**
- Programmed cryptocurrency trading bot using HTTP requests and WebSocket to perform 24/7 trading

Metal and Water Level Detectors, UBC **March, 2021 – April, 2021**
metal-detector-video water-detector-video
- Collaborated with two peers to coordinate tasks and deadlines, ensuring clear team communication
- Designed WAV file lookup table in assembly to read specific audio clips from flash memory
- Consulted microcontroller's C library and port specifications to configure LCD with pic32
- Programmed IRQ in C to ensure that sensor readings and audio output appeared seamless to users

Motivational Task Manager, UBC **October, 2020 – December, 2020**
- Applied object-oriented principles to build java-based to-do list application that stores all accomplished, current, and failed tasks and offers negative feedback for failure

Basic Microcomputer, UBC **September, 2020 – December, 2020**
- Created simple microcomputer from scratch with Verilog, ModelSim, and Quartus Prime to better understand components such as CPU, Datapath, ALU, and Memory

ENGINEERING STUDENT TEAMS

UBC Thunderbikes, UBC **September, 2019 – Present**
SM21 Controls and Peripherals Sub-team Lead March, 2020 – Present
- Lead 3-4 CPSC and APSC students, which entails weekly meetings, reliable communication, recruitment interviews, and assigning clear tasks, all to ensure team goals are achieved on schedule
- Applied course material and research skills to determine suitable data acquisition system (DAQ) and CAN compatible display, then integrated these systems on Circuit Maker with standard controls, motor, motor controller, and battery, to ensure compatibility between systems and completeness of build
- Devising flyback transformer main to dc charger circuit, battery build, and Buck step-down converter to create versatile peripheral power system, capable of powering all subsystems on SM21
- Improving upon live telemetry/DAQ prototype system by adding sensors, onboard and server databases, and friendly user experience on the web app, all to clearly depict useful sensor data live

Safety Officer April, 2021 – Present
- Review purchases and risk assessment forms to ensure the team follows safety requirements

LMK4 Technical Member September, 2019 – February, 2020
- Performed WDM, CAD assembly, and other decision-making processes to determine fork purchase

WORK EXPERIENCE

UBC Electrical and Computer Engineering, Vancouver, BC **September, 2021 – Present**
Teaching Assistant for APSC 160 (Introduction to Computation in Engineering Design)
- Assist in instructing students in programming and data acquisition to ensure quality educational experience

Scott Construction, Vancouver, BC **July, 2019 – August, 2019**
Unskilled Labourer
- Followed work safety best practices while utilizing a range of electrical and hand tools to perform necessary tasks under the supervision of the site's superintendent

Pedalheads, Greater Vancouver, BC **March, 2018 – March, 2019**
Instructor
- Attained excellent supervisory skills while teaching children road/mountain biking to ensure class adhered to company safety and communication protocols

PNE, Burnaby, BC **August, 2016 – August, 2017**
Ticket Seller
- Answered customer inquiries while performing monetary transactions to provide courteous customer service in high-paced environment

INTERESTS & ACTIVITIES

- Mountain biking, snowboarding, soccer
- Cooking, vector graphic design