Krish Thakur - OUTDATED

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SKILLS

Programming Languages: Python, C, C++, Java, AArch64 Assembly, Bash/Fish, Arduino, Golang, JS/TS
Systems & Hardware: FPGA, SystemVerilog, Altium, STM32, Soldering, Oscilloscope, TCP/IP, CAN
Technologies & Tools: Git, GDB, Linux - Ubuntu/Arch/Proxmox, Jira, Confluence, MATLAB, Docker, K8s

EDUCATION

University of British Columbia | Bachelor of Applied Science in Computer Engineering — Expected May. 2027

- Dean's Honour List, Co-op: available up to 16 months

TECHNICAL EXPERIENCE

UBC Formula Electric — Sep. 2024 - Present

LV Firmware Developer | **Website**

- Devised firmware for low-voltage systems on the Quintuna vehicle in C, enhancing system efficiency by ~20% and reducing failure rates by ~15% by adding a bootloader deinitialization sequence to restart peripherals
- Designed innovative solutions to enhance data processing and communication over CAN, while developing new VC chip drivers and configuring peripherals, in collaboration with a cross-functional team
- Integrated the Front Sensor Module (FSM) in C by referencing electrical team schematics, ensuring seamless compatibility with Quintuna's low-voltage architecture using FreeRTOS on an STM32 microcontroller

CANSAT Satellite Design Challenge – Team Idealite — Sep. 2022 - Apr. 2023

Head of Software and Electronics | Top 4 | **Website**

- Spearheaded the design of the full satellite automation system to send data via radio as well as survey land utilizing stable camera and AI identification (using TensorFlow) all within size restraints of a can
- Scripted 20+ Arduino and Python programs to handle autonomous control preventing against 85% of potential failures

PROJECTS

NanoPulse-OS — Dec. 2024 - Present

C, Assembly, GRUB, QEMU | **GitHub**

- Developed and optimized a lightweight, live operating system that boots from USB, gaining expertise in low-level hardware interaction, retro game development, and generative art using C and Assembly in a Linux environment.
- Built custom hardware drivers and a minimalist programming language interpreter, ensuring cross-platform compatibility and efficient use of system resources with x86 architecture support and GRUB for boot management

Runix Cloud – Proxmox server — Jan. 2025 – Present

Python/Bash, Docker, K8s, Linux, KVM, TLS, MangoDB, Nginx | **GitHub**

- Deployed a Proxmox-based homelab server, leveraging virtualization to test embedded Linux environments, cross-compilation toolchains, and firmware development workflows
- Implemented containerized services for web hosting and database management, using Docker to deploy and manage MongoDB, Nginx, and other self-hosted applications for development of REST API sites and static websites
- Optimized network and storage configurations, setting up VPN, efficient file sharing, and automated scripts

LiDAR-based Object Reconstruction System — Dec. 2023 – Apr. 2024

Python, LiDAR, C++, Arduino | **GitHub**

- Devised an object reconstruction system that creates a 3D model of the item placed on the platform in front
- Programmed an Arduino to control stepper motors with precise positioning for accurate LiDAR scanning
- Implemented a Python pipeline using Pyntcloud to process and triangulate the scanned point cloud into a 3D model

WORK EXPERIENCE

Daedalos Robotics Camp — Dec. 2020 - Aug. 2023

Part-time Instructor | Vancouver, BC

- Mentored and instructed 100+ students, grades 1–10, in basic robotics, circuits, motors, and coding fundamentals, fostering hands-on learning and understanding