

Krishnaraj Eswari Niranjan

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Profile

I like to learn how the world works, to build things with that knowledge and share what I have learnt. As an Electrical and Computer Engineering student, I have had the chance to build a strong foundation in both hardware and software development. I have enjoyed developing mobile and desktop applications, tinkering with electronics and working with a variety of programming languages and hardware platforms.

As I conclude my final year at university, I am excited to apply my skills in a professional environment and to contribute to the world in a meaningful way.

Education

University of Cape Town		Electrical and Computer Engineering
Dean's Merit List (Year III)		2023 - Present
Embedded Systems	Algorithms and Theory of Computation	Digital Signal Processing
Electromagnetism	Networks and Operating Systems	Engineering System Design

Technical Proficiencies

Programming Languages Java, Bash, Python, C, C++, NodeJS, Go	Developer Operations Git, Docker, Gitlab CI	UI Frameworks Qt, Android Jetpack, Java Swing
Virtualization QEMU/KVM, Oracle VirtualBox	Monitoring and Observability Grafana, Prometheus	Databases SQLite, MySQL, Apache Tinkerpop
Hosting and Infrastructure Cloudflare, Hetzner	System Administration Linux, Windows	Build Automation Maven, Gradle, Make

Tutoring and Mentoring Experience

University of Cape Town	2024, 2026
Mentor	
Mentored first-year college students, guiding them through academic challenges and offering advice on time management and study strategies. Organized and shared resources to assist students in better preparing for difficult coursework.	
University of Cape Town	2024
Computer Science Course Tutor	
Assisted students with coursework, debugging code, and clarifying key concepts. Graded assignments and tests, providing constructive feedback to improve student performance.	
Young Africans Technology	2023
Volunteer Instructor	
Volunteered as a programming instructor at a non-profit coding academy, teaching foundational coding concepts to primary and high school students. Designed lesson plans, facilitated hands-on JavaScript workshops, and mentored students through projects.	

Business Experience

Riverstone Innovations	2024 - 2026
Property Management	
Part-time entrepreneurial role managing tenant relations and maintenance for a property management business.	

Projects

Gitlab Automation Pipelines

2026

DevSecOps Engineer

Worked with Gitlab pipelines to automate the building and deployment of various applications.

- Worked extensively with predefined components for standardization and maintenance
- Managed dependencies and environment configurations for Spring Boot and AngularJS applications

Data Analytical Audio Player

2025 - 2026

C++ Developer

Developed a cross-platform audio player using miniaudio and libvlc, specialized for data analysis.

- Used Qt's signal and slot mechanism to create a responsive user interface
- Integrated libvlc for extended file format support, with miniaudio as a fallback
- Packaged the application as an AppImage to support multiple Linux distributions
- Created a CI pipeline on a self-hosted Git service with QEMU-based runners to automate building

Cars4Mars African Rover Challenge

2025, 2026

Network and Communications Engineer

Team finalist in a Pan-African competition for students to build a rover prototype. I was responsible for the communication and hardware-software integration systems.

- Designed a wireless communication system to control a rover that integrates a smartphone with a Raspberry Pico microcontroller to enable near real-time communication via UART
- Modified an Android terminal application to interface with the microcontroller
- Worked on system integration of hardware components

Server Hosting and Management

2024 - Present

Linux System Administrator

Set up and maintained a VPS acting as a reverse proxy to expose various self-hosted services.

- Hardened server access with key-based ssh, ufw (firewall) and fail2ban
- Used Prometheus and Node Exporter to collect system metrics and display them on a custom Grafana dashboard
- Created systemd units to automatically start application and monitoring services
- Acquired experience in maintaining open source services like Gitea and OpenStreetMaps

Additive Manufacturing Design Prototype

2024 - 2025

3D Printing Specialist

Gained experience in how 3D printing technology is used for prototyping in small businesses.

- Set up, calibrated, and operated the Anet A8 3D printer for a range of projects
- Designed and modeled 3D prints using Tinkercad and OpenSCAD
- Worked with PLA and TPU
- Managed end-to-end 3D printing process, including post-processing and quality control

Music Player

2022 - 2023

Android Developer

Developed a Java-based native Android music player with spectrogram visualization.

- Designed a responsive interface with RecyclerViews and ConstraintLayouts
- Utilized Android Services and AsyncTask to provide background playback
- Optimized data storage with media hash records and dynamic spectrogram regeneration