

# Samuel Njau Muchiri

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## Summary

Dedicated and driven Electronic and Computer Engineering student with a passion for technology and a strong foundation in both hardware and software disciplines. Eager to leverage my academic background, practical experiences, and data analysis skills to contribute effectively in the dynamic world of electronics and computing.

## Skills

- **Electronics and Hardware:** Proficient in circuit design, soldering, and PCB layout. Strong grasp of analog and digital electronics, telecommunication technologies, microcontrollers (e.g., Arduino, Raspberry Pi and NodeMCU).
- **Software Development:** Skilled in programming languages such as C, C++, PHP, and Python, with experience in developing software for embedded systems and solving real-world engineering problems. Proficient in scripting languages like HTML and CSS for creating functional and user-friendly web interfaces.
- **Web Development:** Developed proficiency in web design and implementation by working with Laravel's Model-View-Controller (MVC) architecture. Gained hands-on experience in designing frontends using tools such as Tailwind CSS, Blade, and Vite. On the backend, utilized various Laravel features including Eloquent ORM, robust authentication mechanisms, and task queues, among others, to build well-structured and efficient web applications.
- **Data Analysis:** Proficient in data collection, preprocessing, and analysis using tools such as Python libraries (NumPy, Pandas, Matplotlib), Excel, MATLAB and data visualization techniques. Able to derive meaningful insights from complex datasets to inform decision-making.
- **Database Design:** Proficient in database design, database normalization for efficient data storage and manipulation using MySQL , SQLite and Milvus .
- **Leadership:** Proven ability to lead and inspire teams towards common goals. Experience in guiding and motivating team members to achieve optimal performance. Strong decision-making skills, with a focus on strategic thinking and problem-solving.
- **Project Management:** Track record of successfully overseeing and delivering projects on time and within budget. Ability to develop project plans, allocate resources, and monitor progress to achieve project objectives.
- **Adaptability:** Flexible and adaptable in navigating dynamic and fast-paced work environments. Quick to assess and respond to changing circumstances, ensuring continued progress towards goals.

## Work Experience

### IT Intern

May 2022 - August 2022

#### National Public Health Laboratory

- Website design using WordPress.
- Creation and development of the institution website formerly ([nphl.go.ke](http://nphl.go.ke)).
- Research on improvement of Laboratory Management Information System.

### Electronic Engineer Intern

May 2023 - August 2023

#### Kenyatta National Hospital

- Data analysis using Excel and Python
- Printer maintenance and repair
- Wireless and wired networking

### Backend Developer

May 2024 – To Now

#### Raven Geek Limited

- Backend Development using Laravel
- Payment integration using Daraja API.
- Research and implementation of vector databases using milvus.
- Development of the frontend and user views from the given designs using Blade and Vite.
- Managing deployment of the web application using Apache2 and Nginx.
- Adapting to industry level authentication and website security.
- Designing and developing databases.

## Education

### Electronic and Computer Engineering

Jomo Kenyatta University

2020—2025

Driven by a genuine enthusiasm for electronics, computer engineering, and a knack for data analysis, I am eager to contribute my skills and passion to a forward-thinking organization. I am excited about the opportunity to apply my knowledge and continue learning while making a meaningful impact in the field.

### High School Education

Muhoho High School

2016—2019

## Certifications

- [WordPress Website Development](#)
- [Programming with Python](#)

## Projects

### 1. SMART PARKING WITH MPESA

The project entailed the creation of a working smart parking system that had payment services and users were able to view real time state of the parking space. The project was made possible through the programming of the NodeMCU ESP8266. The project covers PCB fabrication, Hardware programming, designing communication, usage of a database and web development. The link to the project documentation is shown below.

<https://github.com/SAMUELMUCHIRI/SMART-PARKING-WITH-MPESA>

### 2. ROBO– DOJO

The project was part of the ROBO-DOJO competition held in Jomo Kenyatta University on 2nd-4th October 2023. The aim of the project was to come up with an autonomous car with line following, object detection and arm movement capabilities. I was the hardware programmer in our team and we managed the line following capability, and arm movement. The link to the project documentation is shown below.

[https://github.com/SAMUELMUCHIRI/Robo\\_Dojo](https://github.com/SAMUELMUCHIRI/Robo_Dojo)

### 3. Autonomous Robot

The project consisted of building a wheeled robot which was able to map its surrounding environment and get to the target avoiding obstacles. The link to the project is shown below.

[https://github.com/SAMUELMUCHIRI/Autonomous\\_robot](https://github.com/SAMUELMUCHIRI/Autonomous_robot)

## Languages

English	Fluent
Kiswahili	Fluent

## References

Available on request