

Alain NIGANZE

Senior Software Developer | Embedded Systems Specialist

Contact Information

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Professional Summary

Highly skilled and innovative Senior Software Developer with extensive experience specializing in embedded systems. Proven track record of designing, developing, and implementing software solutions for embedded applications across various industries. Adept at working in cross-functional teams, driving product development from concept to deployment, and continuously optimizing performance and reliability.

Core Competencies

- Embedded Systems Development
- Real-Time Operating Systems (RTOS)
- C/C++ Programming
- Python and Embedded Python
- Firmware Development
- Microcontroller Programming (ARM, AVR, PIC)
- IoT (Internet of Things) Solutions
- Software Architecture and Design
- Debugging and Testing
- Agile Methodologies
- Cross-Platform Development
- Version Control Systems (Git)
- **PCB design and layout.**

Professional Experience

Senior Software Developer | ALX-Africa

Jun 2022 – Jul 2023

- Successfully completed a 12-month ALX Software Engineering Programme with a specialization in Back End Development.
- Led the development of embedded software for various innovative projects, significantly enhancing system efficiency and performance.
- Collaborated with cross-functional teams to integrate new technologies and optimize existing solutions, ensuring seamless functionality and improved user experience.
- Provided mentorship and guidance to junior developers, promoting best practices in software development and fostering a culture of continuous learning and improvement.

Embedded Systems Engineer | ICT Chamber Training

Mar 2024 – Jun 2024

- Developed and optimized firmware for embedded and IoT training projects, ensuring high performance and reliability.
- Conducted extensive testing and debugging of embedded software, significantly reducing field issues.
- Designed and implemented IoT solutions, integrating various sensors and communication modules.
- Created PCB layouts and schematics for embedded systems projects, ensuring efficient and reliable hardware designs.
- Worked closely with hardware engineers to design and integrate firmware solutions, achieving seamless hardware-software interaction.

Software Developer | KLAB-Rwanda

May 2023 – Dec 2023

- Upon successful completion of a Software Development Program for a duration of 3 months at kLab Startups Academy.
 - **Content covered:** Figma, HTML, CSS, JavaScript, React.js
- Designed and coded embedded software for consumer electronics, contributing to the successful launch of multiple products.

- Utilized Agile methodologies to manage development sprints, improving project delivery times.
 - Automated testing procedures, enhancing software validation processes.
 - Developed an e-learning platform called "Teach Me," which provided interactive lessons and resources for students, utilizing React.js for the frontend and integrating various educational tools.
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Education

Bachelor of Science in Computer Software Engineering

University of Rwanda, 2024

Certifications

- Certified Embedded Systems Engineer (CESE)
 - ARM Accredited Engineer (AAE)
 - Certified ScrumMaster (CSM)
 - Alx-africa for full-stack developer.
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Projects

- **Advanced Driver Assistance Systems (ADAS):** Led the development of embedded software for ADAS, enhancing vehicle safety features such as lane departure warning and adaptive cruise control.
- **Smart Home Automation:** Designed and implemented firmware for IoT-enabled smart home devices, integrating with voice assistants and mobile applications.
- **Gate Guard Visitor Notification System:** Improved visitor and homeowner experience by providing reliable, secure, and efficient communication at gated properties. Enhanced security and convenience through real-time notifications and customizable responses.

Publications and Presentations

- **"Optimizing Firmware for Low-Power Embedded Systems,"** Embedded Systems Conference, 2023
- **"Real-Time Data Processing in IoT Devices,"** IEEE IoT Magazine, 2022

Professional Affiliations

- Member, ICT Chamber training.
- Member, Association for Computing Machinery (ACM)
- Member, Embedded Systems Design Association (ESDA).

References

1. Dr. Alexander Ngenzi

- **Title:** Senior Lecturer, Cloud Computing in the university of Rwanda
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- **Affiliation:** ACEIoT UR

2. Lambert Rulindana

- **Title:** Official Trainer, FBLAB Rwanda
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3. Wilson Ndayisaba

- **Title:** ICT Chamber Facilitator (Embedded Systems)
- **Tele:** +250 783 115 120
- **Affiliation:** ICT Chamber.