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WORK EXPERIENCE

 **CAMERTRONIX** – YAOUNDE, CAMEROON

SOFTWARE DEVELOPER – 07/01/2021 – 01/03/2021

Developed an automated solution for public lighting mapping and photometric analysis.

- **Designed an image processing pipeline** to generate high-resolution orthophotos (GeoTIFF) from aerial imagery using **Python** and the open-source software **WebODM**.
- **Developed scripts (Python, OpenCV, GDAL)** to automatically detect and extract the geospatial coordinates of thousands of luminaires from the orthophoto map.
- **Engineered a process to automatically generate photometric data files (.LDT)** for each detected luminaire, based on their position and known illuminance levels.
- **Validated the generated data** by integrating and visualizing it in specialized software such as **QGIS** for spatial analysis and **DIALux** for lighting simulation.
- **Achieved objective:** Created a system enabling rapid, large-scale analysis of light distribution, providing a crucial foundation for energy efficiency studies and regulatory compliance assessments.

 **CAMERTRONIX** – YAOUNDE, CAMEROON

PROJECT MANAGER – 01/06/2020 – 01/10/2020

Led the end-to-end development of "Panoviewer," a high-performance, cross-platform 360° video viewer.

- **Managed the complete project lifecycle**, from initial requirements gathering and technical specification to final deployment, ensuring project delivery on time and within scope.
- **Architected and developed the core application** using **C++/Qt** for the user interface and **OpenGL** for efficient, hardware-accelerated rendering of 360-degree video streams.
- **Engineered a portable codebase** to guarantee seamless deployment and performance across multiple operating systems, including **Windows, Linux, and custom Embedded Systems**.
- **Coordinated with stakeholders** to define project milestones, provide regular progress updates, and conduct final user acceptance testing (UAT).

 **CAMERTRONIX** – YAOUNDE, CAMEROON

PROJECT MANAGER – 01/10/2017 – 01/05/2020

Led the research and development of a "Scan-to-BIM" software solution to automatically generate building models from 3D point cloud data.

- **Managed the project from concept to delivery**, defining the product roadmap, setting milestones, and overseeing the development team's progress.
- **Pioneered the core feature detection engine** by translating state-of-the-art scientific research on point cloud segmentation into production-ready code.
- **Developed and implemented robust algorithms** to automatically detect and classify key building components, including floors, rooms, walls, doors, and windows from raw point cloud scans.
- **Engineered the export functionalities** to generate industry-standard 2D/3D models:
 - **DXF files** for compatibility with traditional CAD software.
 - **BIM models (IFC format)** for seamless integration into modern architectural workflows (e.g., Revit, ArchiCAD).
- **Built a lightweight IFC viewer using C++/Qt**, providing users with an integrated tool to validate and inspect the generated BIM models directly within the application.

 **KAOKOO** – YAOUNDE

WEB DEVELOPER – 01/06/2019 – 01/08/2019

Developed and customized key modules for a PrestaShop-based e-commerce platform, enhancing both business management capabilities and the end-user experience.

- **Engineered a custom point-of-sale (PoS) management module** for PrestaShop, enabling centralized inventory management, sales tracking, and transaction processing directly within the platform's back-office.
- **Customized and deployed a third-party marketplace module**, adapting its features to meet specific business requirements for vendor management and product listings.

- **Integrated social authentication (OAuth 2.0)** with Facebook and Google, simplifying the user registration process and significantly improving account creation rates.
- **Technical Environment:** PrestaShop, PHP, Smarty, MySQL, JavaScript, HTML/CSS.

 **CAMERTRONIX** – YAOUNDE, CAMEROON

SOFTWARE ENGINEER – 01/06/2016 – 01/09/2017

Developed "StereoVis," a complete stereovision application for 3D reconstruction, from desktop to mobile deployment.

Desktop Application (C++):

- **Architected and built a 3D reconstruction application** featuring stereo camera calibration and point cloud generation from stereo image pairs.
- **Implemented core functionalities** including loading, processing, and visualizing point cloud data (PCD, PLY formats) using libraries like **VTK** and **PCL (Point Cloud Library)**.
- **Managed a complex development environment** by building and integrating essential C++ libraries from source, including **PCL, Boost, OpenCV, Eigen, and FLANN**.

Android Port (Java/C++ with NDK):

- **Led the challenging initiative to port the application to Android**, enabling on-site 3D scanning and analysis capabilities.
- **Successfully cross-compiled the entire PCL (Point Cloud Library) and VES toolchains** for the ARM architecture using the **Android NDK**.
- **Integrated the native C++ backend** with an Android UI, leveraging **KiwiViewer** for efficient mobile 3D rendering and interaction.
- **Result:** Delivered a dual-platform solution capable of performing complex 3D reconstruction on both high-performance desktops and portable Android devices.

 **CAMERTRONIX** – YAOUNDE, CAMEROON

SOFTWARE ENGINEER – 01/03/2016 – 01/05/2016

Contributed to the development of a peer-to-peer lending platform, building key features from front-end interfaces to backend services and mobile deployment.

- **Developed dynamic and responsive user interfaces using Angular**, creating a modern front-end for the web application.
- **Implemented a barcode scanning feature using QuaggaJS**, enabling users to instantly identify and retrieve information about physical items for listing and borrowing.
- **Engineered a real-time messaging system** to facilitate direct communication between borrowers and lenders, leveraging a **Neo4j graph database** to efficiently model and manage complex user relationships and transaction histories.
- **Led the development of the hybrid mobile application** by porting the **Angular** web platform using **Apache Cordova (PhoneGap)**, resulting in a rapid deployment of an Android (.apk) version and expanding user accessibility.
- **Technical Stack:** Angular, JavaScript, HTML/CSS, QuaggaJS, Neo4j, Apache Cordova/PhoneGap.

 **SDK GAMES AFRICA** – YAOUNDE, CAMEROON

INTERNSHIP – 01/06/2015 – 01/09/2015

Served as the dedicated backend developer for a new social engagement platform, responsible for building the entire server-side logic and API from the ground up using Laravel.

- **Designed and developed the core RESTful API** that powered the entire application, creating all critical endpoints for event management, user data, and the interactive quiz system.
- **Collaborated closely with the frontend developer** to define clear API contracts and ensure seamless data integration between the **Laravel backend** and the **Angular frontend**.
- **Implemented the server-side integration of the Facebook Graph API** to securely handle social authentication (OAuth 2.0) and fetch user profile data for personalization.
- **Managed the application's database schema and logic** using **MySQL**, ensuring data integrity and efficient queries for all platform features.

Technical Environment:

- **Backend:** Laravel (PHP)
- **Database:** MySQL
- **API Design:** RESTful APIs
- **Integrations:** Facebook Graph API (OAuth 2.0)

 **IOTAORIGIN UG** – YAOUNDE, CAMEROON

LEAD SOFTWARE ENGINEER – 01/04/2021 – 18/12/2021

As the lead engineer, I architected and directed the development of a secure, decentralized platform for mineral traceability from concept to mobile deployment.

- **Architected a secure and decentralized data layer** using **IPFS** for immutable storage and **IOTA Streams** for real-time, encrypted data transmission, ensuring a tamper-proof audit trail for high-value minerals.
- **Deployed and maintained a dedicated IOTA Hornet Node** to guarantee robust network connectivity and reliable transaction processing for the platform.
- **Led the development of a cross-platform mobile application using Flutter**, providing stakeholders with a user-friendly interface to track assets, manage identities, and view encrypted supply chain data on the go.
- **Technical Stack:** Flutter, IOTA (Streams, Hornet), IPFS, Dart, Cryptography.

PERSONAL PROJECT – YAOUNDE, CAMEROON

PROJECT MANAGER – 22/04/2024 – 30/06/2024

Designed and built a complete, full-stack NFT marketplace from the ground up, demonstrating end-to-end capabilities in Web3 development—from UI/UX design to on-chain logic and efficient data indexing. The live platform is accessible here: <https://nft-marketplace-beryl.vercel.app/>

- **Smart Contract Development:** Authored and deployed a custom smart contract using **Solidity** and **Hardhat**, enabling resell NFTs on a secondary market at their chosen price.
- **Decentralized Data Indexing:** Developed and deployed a custom **Subgraph** using The Graph Protocol. This provided a highly efficient, scalable, and real-time API for querying marketplace data (active listings, sales history, owner assets) on the front-end, avoiding direct and slow blockchain calls.
- **UI/UX Design:** Prototyped and designed the entire user interface and user experience (UI/UX) in **Figma**, focusing on intuitive navigation, a clean aesthetic, and a fully responsive layout.
- **Front-End Development :** Built a fast and responsive front-end DApp using **Next.js** for optimal performance and SEO, and styled with **Tailwind CSS** for rapid, utility-first development. Integrated **Ethers.js** for seamless wallet interaction.

Technical Stack: Next.js (React), Ethers.js, Solidity, Hardhat, The Graph Protocol (Subgraph), Figma, Tailwind CSS, Vercel.

PERSONAL PROJECT – YAOUNDE, CAMEROON

PROJECT MANAGER – 01/05/2025 – 17/05/2025

Conceived, designed, and developed a full-stack mobile application from scratch, leveraging Google's Gemini AI via a serverless backend to deliver truly personalized fitness coaching. (<https://github.com/nareph/gymgenius>)

- **AI Backend Integration:** Architected the core feature by developing a **Firebase Cloud Function (TypeScript)** that interfaces with the **Google Gemini API**. This serverless function processes detailed user fitness profiles to generate dynamic, tailored weekly workout plans.
- **Full-Stack Flutter Development:** Built a feature-rich and intuitive mobile application using **Flutter**. This includes:
 - Multi-step user onboarding and profile management.
 - Complex workout session management with integrated timers and detailed logging (reps, weight, duration).
 - A calendar-based workout history tracker for visualizing progress.
- **Backend & Database Management:** Implemented a robust backend using the **Firebase** suite, leveraging **Cloud Firestore** for structured data storage (user profiles, AI-generated routines, workout logs) and **Firebase Authentication** for secure user account management.
- **State Management:** Managed application state efficiently using a combination of **Provider** for global session data and the **BLoC pattern** for handling complex logic flows, such as the multi-screen onboarding process.

Technical Stack:

- **Frontend:** Flutter (Dart)
- **Backend:** Firebase (Authentication, Firestore, Cloud Functions in TypeScript)
- **AI Integration:** Google Gemini API
- **State Management:** Provider, Flutter BLoC
- **UI/UX:** Material Design 3

PERSONAL PROJECT – YAOUNDE , CAMEROON

PROJECT MANAGER – 24/05/2025 – CURRENT

Engineered a full-stack SaaS productivity platform from scratch, architecting a high-performance backend in Rust (Actix-web) and a dynamic, interactive frontend in Next.js. (<https://github.com/nareph/OptiTask>)

- **High-Performance Rust Backend:** Architected and implemented a robust REST API using **Rust** and the **Actix-web** framework to handle all core business logic. Utilized the **Diesel.rs** ORM for type-safe, efficient queries to a **PostgreSQL** database, managing all data for tasks, projects, and time-tracking analytics.

- **Interactive Frontend Development:** Developed a feature-rich user interface with **Next.js** and **TypeScript**, featuring:
 - A dynamic Kanban board with drag-and-drop functionality built with **@dnd-kit**.
 - Data visualization dashboards with **Recharts** to display user productivity trends.
 - A clean, responsive UI styled with **Tailwind CSS**.
- **Authentication & Third-Party Integration:** Engineered a secure authentication system using **NextAuth.js**, supporting both credential-based and OAuth providers (Google, GitHub). Integrated the **Google Calendar API** to securely fetch and display user events within the application.

Technical Stack:

- **Backend:** Rust, Actix-web, Diesel.rs
- **Frontend:** Next.js (React), TypeScript, Tailwind CSS
- **Database:** PostgreSQL (hosted on Supabase)
- **Authentication:** NextAuth.js

🏠 **IOTAORIGIN UG** – YAOUNDE, CAMEROON

LEAD SOFTWARE ENGINEER – 14/05/2022 – 01/08/2023

Spearheaded the full-cycle development and successful launch of the Snippool.xyz NFT marketplace, delivering a commercial-grade Web3 platform for the Shimmer ecosystem.

- **Spearheaded the end-to-end development** of the Snippool NFT marketplace, from smart contract design to a fully deployed DApp on the Shimmer network.
- **Authored, tested, and deployed a suite of custom smart contracts using Solidity and Hardhat**, establishing the on-chain logic for NFT minting (ERC-721), ownership, and marketplace transactions on the **Shimmer EVM**.
- **Engineered a high-performance, server-side rendered front-end using Next.js**, integrating **Ethers.js** to enable seamless user wallet connections and interaction with the deployed smart contracts.
- **Implemented decentralized metadata storage using Infura's IPFS service**, ensuring the persistence and immutability of NFT assets.
- **Outcome:** Successfully launched the live platform, available at <https://www.snippool.xyz>, providing a fully functional and scalable marketplace for the Shimmer ecosystem.
- **Technical Stack:** Next.js (React), Ethers.js, Solidity, Hardhat, Shimmer EVM, Infura IPFS.

🏠 **PERSONAL PROJECT** – YAOUNDE, CAMEROON

PROJECT MANAGER – 22/06/2025 – 01/08/2025

Engineered and developed a complete, cross-platform desktop application from the ground up, leveraging Rust for high-performance backend logic and the Slint toolkit for a native user interface. (<https://github.com/nareph/depot-boissons>)

- **Backend & Database Architecture:** Architected the entire business logic in **Rust**, using the **Diesel.rs ORM** to ensure type-safe and efficient access to a local **SQLite** database, guaranteeing full offline functionality.
- **Native User Interface (UI):** Built a responsive and intuitive user interface with the **Slint toolkit**, featuring a real-time dashboard, a comprehensive Point-of-Sale (POS) system, and management screens for products and users.
- **Advanced Business Features:** Implemented high-value modules, including an advanced accounting and reporting system with **PDF/Excel exports**, and a bulk product import feature with real-time **CSV** data validation.
- **Security & Access Management:** Integrated robust security practices, including password hashing with **bcrypt** and a secure first-login flow requiring a mandatory password change for the default admin account.

Technical Stack:

- **Language:** Rust
- **User Interface:** Slint
- **Database:** SQLite
- **ORM:** Diesel.rs

● EDUCATION AND TRAINING

01/02/2015 – 01/06/2016 Yaounde, Cameroon

MASTER 2 IN COMPUTER SCIENCE University of Yaounde 1

Website <https://uy1.uninet.cm/>

07/09/2013 – 01/07/2014 Yaounde, Cameroon

MASTER 1 OF COMPUTER SCIENCE University of Yaounde 1

Website <https://uy1.uninet.cm/>

Website <https://www.univ-douala.cm/>

● LANGUAGE SKILLS

Mother tongue(s): **FRENCH**

Other language(s):

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken production	Spoken interaction	
ENGLISH	A1	B2	A1	A1	B2

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user