Avotra Niaina Rakotoson
Software Engineer

Spoken languages: Malagasy, English and French

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TECHNICAL SKILLS

Operating system	Windows 7/10/11 – Linux (Ubuntu, Debian) – Mac OS
Web Technology	HTTP – FTP – WebSocket – REST– GraphQL – SOAP
Programming languages	JavaScript – TypeScript – Ruby – PHP – Bash script– Dart – Python – SQL – HTML5 & CSS3
Design	Merise I & II – UML 2 – Agile (Scrum)
Programming approach	POO – TDD – Agile – CI/CD – DevOPS
Database management system	PostgreSQL – MySQL & MariaDB – MongoDB – Sqlite – Redis – IndexDB – Elasticsearch

STUDIES

Google Africa developer Scholarship   2020

Online session

Specialization: Android developer

Master's Degree in Computer Science   2018

IT University, Antananarivo
Specialization: Mobility, Big Data and Systems Integration (MBDS)

Bachelor's Degree in Computer Science   2017

Athénée Saint Joseph, Antsirabe
Specialization: Computer Application Development

PROFESSIONAL EXPERIENCES

SERVYIA SRL U — Software Engineer

April 2024 to date

Project: Pertimm – Search Engine Platform
Role: Senior Software Engineer

Pertimm is a European leader in search engine solutions, powering major clients such as E.Leclerc and Showroomprivé. I played a key role in designing a scalable architecture aimed at improving search performance, reliability, and maintainability across distributed systems.

Main Contributions:

- **Node.js development:** Built a high-performance application to merge and sort distributed indexing results from multiple servers, leveraging Node.js worker threads for parallel processing and scalability.
- **Ruby optimization:** Enhanced a Ruby-based job management system to **handle queued product updates** from JSON feeds more efficiently.
- **Web interface redesign:** Developed a **new web interface** for **visualizing and testing search engine features**, improving usability and internal testing workflows.
- **Deployment automation:** Created **Bash automation scripts** to streamline deployment and configuration across servers in the new architecture.
- **Technology migration:** Led the **upgrade of PHP from v5 to v8** and **Ruby from v2 to v3**, modernizing the codebase and improving performance and security.
- **Task scheduling:** Implemented **cron jobs** to automate recurring maintenance and operational tasks.
- Module maintenance: Ensured long-term system stability through active monitoring, updates, and scalability improvements across multiple application modules.

Technical specifications : *C/C++, Perl, Bash Script, NodeJS, Ruby, Ruby on Rails, PHP, Smarty, Javascript, CoffeeScript, JQuery HTML, CSS, MySQL, Redis, ElasticSearch, Java, JQ, FluentD, RESTful, SOAP, Git, Gitlab, Trello*

Adopt IT — Software Engineer

May 2022 to April 2024

Project: eCommerce Application
Role: Lead Developer

As Lead Developer at **Adopt IT**, I was entrusted with the development of a **high-traffic eCommerce platform** offering a wide range of products to thousands of customers. I contributed to the **design and optimization of the site's architecture**, focusing on **performance, scalability, and user experience**.

Main Contributions:

- **Backend development:** Designed and implemented core features using **NestJS**, ensuring robust API endpoints and efficient business logic.
- **Frontend development:** Built dynamic and responsive user interfaces with **Angular** and **TailwindCSS**, improving overall usability and speed.
- **Mock data integration:** Utilized **dummy (mock) data** to support frontend development and facilitate independent testing prior to backend integration.
- **Database optimization:** Designed and fine-tuned **database schemas and queries** to guarantee optimal application performance and scalability.
- **Automated testing:** Implemented **comprehensive automated test suites** to maintain high code quality, prevent regressions, and ensure system reliability.

Technical specifications : *NestJS, PostgreSQL, Javascript, Angular, HTML, CSS, TailwindCSS, Git, Tello*

Katana SAS — Application Developer Designer

February 2022 to May 2022

Project: Werenov – Repair Tracking Platform
Role: Fullstack Developer

I joined the **Werenov** technical team to help modernize a web application designed to **track and manage repair progress** within buildings. My role focused on enhancing both the frontend and backend to improve usability, maintainability, and functionality

Main Contributions:

- **UI/UX redesign:** Led the **complete redesign of the web interface**, improving clarity and user engagement.
- **Backend development:** Built and optimized backend services using **Node.js**, ensuring reliable data flow and system performance.
- **Frontend development:** Developed responsive and interactive user interfaces with **Angular 11** and **Bootstrap**, providing a seamless user experience.
- Feature enhancement: Contributed to the update of existing modules and integration of new functionalities to extend platform capabilities.

Technical specifications : *NodeJS, MongoDB, Javascript, Angular, HTML, CSS, Bootstrap, Git, Trello*

Consult & Co Digital — IT Consultant

Project: XXL Happyness – Web & Mobile Application
Role: Fullstack Developer

To support its client in **improving employee well-being and quality of work life**, **XXL Happyness** launched a new application to better manage internal activities and engagement. I joined the **Consult & Co Digital** team as a **Fullstack Developer**, contributing to both the web and mobile platforms.

Main Contributions:

- **Dashboard development:** Created an **interactive dashboard** to evaluate user responses and visualize key insights.
- **KPI module:** Designed and implemented a **dedicated KPIs module** to track and measure performance indicators.
- **Automated modules:** Developed **background modules** executed automatically and periodically to streamline operational processes.
- **Functional testing:** Performed **comprehensive functional tests** based on the project's test documentation to ensure reliability and compliance.

Technical specifications : *NodeJS, NestJS, MongoDB, Javascript, React Native, GraphQL, HTML, CSS, Git, Trello*

Project: Octave Telecom – Web Application & Web Scraping
Role: Frontend Developer

As part of a **telecom fleet management initiative**, **Octave Telecom** developed a web application to **optimize costs and reduce time spent managing telecom assets**. I joined the **Consult & Co Digital** technical team as a **Frontend Developer**, contributing to the design and development of the user interface and data integration.

Main Contributions:

- **Angular component development:** Built reusable and responsive **Angular components** to ensure modular and maintainable code.
- **REST integration:** Developed **Angular services** to retrieve and manage data from **RESTful APIs** efficiently.
- **UI integration:** Integrated the **web design model** into the application, ensuring visual consistency and a smooth user experience.

Spécifications techniques : *Javascript, Angular, RESTful, HTML, CSS, Git, Trello*

Haizaha — Software Engineer

Project: Accord Knits – Yarn System Management
Role: Technical Manager & Fullstack Developer

As part of its **design, knitting, and export operations**, **Accord Knits** developed a robust web application to **track and manage production processes**. To ensure quality, adherence to deadlines, and compliance with development standards, the company partnered with **Haizaha** to lead the project under optimal conditions.

Main Contributions:

- **Project leadership:** Managed the **complete software development lifecycle** — from defining technical specifications and planning to development, deployment, and delivery.
- **Estimation & planning:** Assessed module complexity, estimated workloads, and defined development priorities.
- **UI/UX design:** Created modern and user-friendly **interface designs with Figma.**
- **Custom features:** Designed and implemented a **custom filtering system** to enhance data visualization and workflow efficiency.
- **Data processing:** Utilized **Python (NumPy)** for complex data manipulation and analytics.
- **Database migration:** Migrated the legacy **Microsoft Access** database to **PostgreSQL** for improved scalability and reliability.
- **Documentation:** Authored a **user manual** detailing application setup, configuration, and operation procedures.

Technical specifications : NodeJS, NestJS, Python, Ruby on Rails, PostgreSQL, Access DB, IndexDB, SQLAlchemy, StringIO, REST API, Javascript, Angular, HTML, CSS, Tailwind, Docker, Dropbox, Git, Trello, ClickUP, Redash

Project: AD2M – Evaluation Monitoring and Rural Development Support
Role: Web & Mobile Developer

To **evaluate and support rural development**, **AD2M** initiated the creation of a **web and mobile platform** dedicated to **productive development, land security, and market access support**. The organization partnered with **Haizaha**, recognized as a leader in digital transformation, to ensure a high-quality and impactful solution.

Main Contributions:

- **Mobile development:** Built a **field data collection mobile application** using **Ionic**, enabling real-time input from rural agents.

- **Backend development:** Developed backend services with **Node.js**, ensuring efficient data management and secure communication between the mobile app and the server.
- **Frontend development:** Implemented the **administration interface** using **Angular** and **EJS**, providing user-friendly tools for data visualization and project monitoring.
- **Deployment management:** Delivered application builds across multiple environments; **testing, pre-production, and production;** ensuring stability and smooth transitions between stages.

Technical specifications : NodeJS, Express, PostgreSQL, Javascript, Angular 10, HTML, CSS, Ionic, Electron, Gradle, Release APK, Docker, Git, Trello

Project: Track Chrome Extension – Activity Monitoring for Annotation Platform
Role: Frontend Developer

To ensure **data quality for AI model training**, **Haizaha** implemented a tracking system to **monitor annotators' activities on local machines**. I joined the development team to build a **Chrome extension** that enables secure and efficient activity tracking.

Main Contributions:

- **Chrome extension development:** Built the extension using **Angular**, ensuring seamless integration with the annotation platform.
- **Activity monitoring:** Implemented **keyboard activity tracking** and visualized results using **Redash** dashboards.
- Data pipeline: Developed a pipeline to collect and centralize activity data from each machine for analysis.
- **Deployment automation:** Automated the **extension publishing process** with a **Bash script** to streamline updates across users.

Technical specifications : Javascript, Angular 10, HTML, CSS, Redash, Bash, Git, Trello

Soku Madagascar — IT Consultant
June 2017 to August 2019

Project: Digidom – Business Creation & Domiciliation Platform
Role: Backend Developer

To streamline the **creation and domiciliation of companies** while enhancing credibility, productivity, and legal support, **Digidom** developed a web platform in partnership with **Soku Madagascar**, a leading digital transformation consultancy.
Main Contributions:

- **Backend development:** Implemented core application features using **Laravel**, ensuring robust and scalable business logic.
- **Frontend support:** Contributed to the frontend with **HTML, CSS, and jQuery**, enhancing user interface functionality
- **CRM integration:** Integrated a **CRM system** with the platform to improve customer management and workflow efficiency.
- **Emailing module:** Developed and optimized an **automated emailing system** for communication and notifications.
- **Quality assurance:** Conducted **bug fixes and code reviews** to maintain high standards for deliverables.
- Project planning: Estimated modules and components, and actively participated in sprint planning and review meetings to ensure timely delivery.

Technical specifications : *PHP, Laravel, MySQL, Javascript, JQuery, HTML, CSS, React Native, Docker, Dropbox, Git, Trello*

Ministère de l'intérieur et de la Décentralisation — Application Designer & Developer Intern

March 2017 to June 2017

This project aimed to **analyze and optimize the processing of birth and death certificates**, identifying flaws and extracting relevant information to improve efficiency and accuracy. Collaborating closely with control engineers, we developed a web application and prepared a **user manual** to facilitate its adoption.

Main Contributions:

- **Analysis & design:** Conducted process analysis and designed a **relational, optimized database** using **UML2** to structure workflows efficiently.

- **Backend development:** Built core application logic using the **CakePHP framework**, ensuring robust and maintainable backend functionality.

- **Frontend development:** Developed a **responsive user interface** with **jQuery** and **Bootstrap**, improving usability and accessibility.

Technical specifications : *PHP, CakePHP, MySQL, Javascript, JQuery, HTML, CSS*

IMPLICATIONS AND LEISURE

- **IT Manager** – *Club des Entrepreneurs Étudiants du Rendez-vous des Entrepreneurs (CEERE), Antsirabe* (2016-2017)
  Management of technical and digital aspects to support club activities.
- **Leisure** : Passionate about **travel**, **photography**, as well as **sports**, especially **E-Sport** and **football**.
- While learning the Rust language and deepening Typescript.