Rosas Behoundja

Cotonou, Bénin perrierosas@gmail.com rosasbehoundja.github.io rosasbehoundja
rosasbehoundja

Third-year undergraduate student in computer science with specialization in Artificial Intelligence. My interests lie in research in optimization and machine learning. I enjoy building tools and participating in tech projects capable of solving real-world problems in Benin and across Africa, regardless of the field.

Education

IFRI, University of Abomey-Calavi, Bénin *Nov 2023 - Present*
Bachelor of Science in Artificial Intelligence

Experience

Software Engineer *Cotonou, Bénin*
IFRI & Tekbot Robotics *June 2025 – Jan 2026*

- Implemented autonomous navigation algorithms in ROS2/Gazebo for simulated obstacle avoidance.
- Deployed a custom-trained YOLOv5n model on an NVIDIA Jetson Nano, accelerating real-time inference via ONNX-to-TensorRT conversion and pyCUDA for a robotic waste sorting system.
- Programmed robotic arm motion planning and manipulation using MoveIt (ROS) to autonomously grasp and sort waste items identified by the live vision system.
- Achieved 2nd (silver medal) place among 09 teams in the final challenge.

Machine Learning Engineer Intern *Johannesburg, S.A*
eTihuku *June 2025 – Aug 2025*

- Developed Sentimaster a ETL platform for multilingual semantic analysis aggregating feedback from X, Hellopeter, and Google Maps with Whisper transcription, fine-tuned RoBERTa sentiment classification, BERTopic topic modeling, and Airflow orchestration.

Projects

MPVRP-CC *Link*

- Proposed a variant of the multi-product vehicle routing problem with production changeover costs, modeling distribution with cleaning constraints between compartments.
- Led technical coordination, developed API, website, and contributed to MILP formulation.

AI-PigStack

- Built an autonomous IoT optimization system for pig farms integrating multi-objective predictive models for growth prediction and early disease detection using environmental sensors and edge computing.

tiny-language-model *Link*

- Implemented from scratch a 37M parameter GPT-style autoregressive language model (12 layers, decoder-only transformer) trained on the LeCarnet corpus (French) using PyTorch.

Opti'plan

- Built automated thesis defense scheduling system using constraint programming (OR-Tools) and greedy heuristics with backtracking, reducing planning time from 2-3 days to under 5 minutes.

Fluxy *Link*

- Built web application for automatic bank transaction extraction from PDF/image statements via Gemini Vision OCR, achieving 90% reduction in manual entry time with less than 2% error rate.

ifri-mini-ml-lib *Link*

- Contributed to educational Python library reimplementing ML algorithms from scratch. Built association rules module (Apriori, Eclat, FP-Growth), coordinated 10+ contributors, and deployed to PyPI with CI/CD.

COVID-Vaccine-GDP Analysis *Link*

- Empirical study of the relationship between COVID-19 vaccination rates and economic indicators (GDP) over the 2020-2023 period.
- Complete ETL pipeline in R: multinational data extraction (Our World in Data, World Bank), cleaning, merging, and statistical analysis.
- Investigation of correlations between vaccination coverage and post-pandemic economic performance.

Extracurricular activities

THE LAB June 2025 - Present

A laboratory of ideas and actions aimed at deconstructing myths, raising awareness and inspiring vocations within communities for a better future around artificial intelligence in Bénin.

FRIARE AFRICA March 2025 - Present

Participate in awareness initiatives on AI ethics, transparency, inclusion, and privacy throughout African communities.

Hackathons & conferences

Benin Workshop in Artificial Intelligence 2025

- Annual workshop hosted by IFRI at the University of Abomey-Calavi, bringing together students, researchers, and professionals to promote AI research, innovation, and collaboration in Africa.
- Delivered a presentation on optimization algorithms: "Evolutionary Algorithms: Principles, Variants and Applications".

Le Foncier intelligent - ASIN & LuxDev Bénin *Link*

- Built land analysis solution in 72h (LuxDev hackathon) combining multimodal OCR for topographic sketch extraction, geocoding, and land use analysis through satellite imagery cross-referencing.

Association for Constraint Programming Summer School 2025

- Constraints programming courses on optimization fundamentals, modeling, and search strategies.

IndabaX Benin Republic 2024 *Certificate*

- 1st Prize: Built an XGBoost cryptojacking detection model (F1-score: 0.97).

Technologies

Languages: Python, C++, SQL, R

AI : Machine learning, Deep learning, NLP, Constraints programming, and Optimization, Robotics, Computer Vision.

Analytical Skills : data preprocessing, visualization, statistical modeling.

Other : Teamwork, leadership, communication, problem solving, critical thinking.

Interests

- Language learning (english and portuguese)
- Walking and traveling.