

SANOGO KASSOUM

**ARTIFICIAL INTELLIGENCE, MACHINE
LEARNING AND DATA ENGINEER**

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SUMMARY

Engineer, researcher and manager with academic and industrial skills in Artificial Intelligence, machine learning, deep learning, data science and embedded systems.

CORE SKILLS

- Artificial Intelligence
- Data Science
- Machine Learning
- Deep Learning
- Data Engineering
- Software Engineering
- Big Data
- Computer Vision
- Embedded Systems
- Natural Language Processing
- AI Agent Creation

CERTIFICATIONS

- AWS Partner Generative AI Essentials
 - AWS Technical Accreditation WAF CAF
 - AWS Certification Data Engineer – Associate
 - AWS Developing Machine Learning Solutions
 - Google – LLMOPS Certification
 - Langchain – Build LLM Application with Langchain.js
 - Langchain – Function, Tools and Agents
 - Langchain – LLM Application Development
 - neo4j – Knowledge Graphs for RAG
 - Weaviate – Building Multimodal Search and RAG
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PROFESSIONAL SKILLS AND COMPANY

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| AI Research fellow Internship – MITACS – UQAC MITACS – UQAC | 2025 : Canada |
| AI & Data Engineer Internship – Future Doctoral Thesis PHD tbmaestro | 2025 : Canada |
| AI & Data Engineer Apprentice – Consultant for other companies APSIDE | 2024 – 2026 : France |
| AI Assistant for Research – CEO Univers AI, finance by Group ESEO Univers AI – Startup | 2025 : France |
| Consultant AI Engineer – Developing AI Solutions for Insurance MMA Assurance | 2025 : France |
| Consultant AI Engineer – Developing AI Solutions for Finance BPI France | 2024 : France |
| Consultant AI Engineer – Developing AI Solutions for Insurance COVEA | 2024 : France |
| AI Researcher Internship – Developing Machine Learning for plants IRD – Paris | 2023 – 2024 : France |
| Data Analyst Internship – Automate Data Extraction System Carrefour | 2023 : France |

SOME OF MY PROFESSIONAL PROJECTS

Multi-LLM Platform Arlette – BPIFRANCE(company)

2024 : France – BPI France

- Production solution enabling interconnection of multiple LLM models on a single RAG system with shared memory.
- LiteLLM to unify model outputs
- LangChain for model chaining
- GroqCloud for Open Source models
- Data science techniques for document processing

Specification Analyzer – GROUP COVEA(company)

2025 : France – Group COVEA

- Automatic specification document analysis platform for development project estimation.
- Development time estimation
- Developer number and level recommendations
- Complete specification analysis
- LLM and Machine Learning techniques

Hydrological Analysis – Bagré Dam(thesis support)

2024 : France – Thesis PHD Support

- Predictive analysis system for Bagré dam water using 10 year dam data.
- Temperature, pressure, and water level data processing
- Water level rise and fall prediction
- Flood and drought period analysis

Log Analysis Platform – MMA(company)

2024 : France : MMA

- Production platform at MMA using advanced techniques for system log analysis and interpretation.
- Regex for log synthesis
- Machine Learning for classification
- Vectorization and LLMs for automatic interpretation

Order Optimization –Carrefour(company)

2023 : France – Carrefour

- Automation and optimization system for warehouse order preparation time.
- Route optimization algorithms
- Preparation process automation
- Significant processing time reduction

Documentation of Code – Apside(company)

2025 : France – Apside

- Orchestration models for AST Analysis
- Segmentation of code in classes, function, variables, imports, ...
- Analyse with context and LLM memory
- Data science techniques for code processing

SOME OF MY RESEARCH PROJECTS

AI for Historical Documents – UQAC Mitacs(research)

2025 : Canada – Mitacs

- Historical document process by creating AI Agent for retranscription
- Analysis and process document pipelines
- Find metadata for context specialisation
- Create AI Platform for this process
- LLM + OCR for relevant process

AI Ethics and GDPR Compliance – Le Mans University(Research document for my MBA)

2025 : France – Le Mans University

- Historical document process by creating AI Agent for retranscription
- Analysis and process document pipelines
- Find metadata for context specialisation
- Create AI Platform for this process
- LLM + OCR for relevant process

Autonomous Specialized Agents

2025 : France – Personal

- Modular design of AI agents with specific capabilities, collaborating via shared protocol.
- Domain-specialized RAG agents
- Web scraping and analysis agents
- Classification and annotation agents
- Modular and extensible architecture

AI and Plants – IRD PARIS(Research)

2023 : France – IRD

- Applied research on artificial intelligence and plants with API development and data visualization.
- Python and Java API for data collection
- Interactive graphics for visualization
- Multi-platform connectivity
- Botanical data input interface

PULSAR Multi-Agent Orchestration – Apside France(company) – CIR research

2025 : France – Apside

- Dynamic orchestration of specialized AI agents via a Super Agent (PULSAR) with shared memory and intelligent prioritization.
- Intelligent coordination pipeline
- Shared memory between agents
- Dynamic task prioritization
- Contextual human interventions

Agent-to-Agent Interoperability

2024 : France – Personal

- Standardization of agent exchanges via JSON for adaptive message passing protocols.
- Standardized communication protocols
- Adaptive and asynchronous message passing
- Automatic protocol negotiation
- Failure management and recovery

EDUCATION

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| Engineering Degree – M.Sc Specialization in Data Science and Artificial Intelligence Advanced training in data science and artificial intelligence, with focus on emerging technologies and industrial applications. GPA 5.0 / 5.0 | ESEO – Top Engineering School (France) 2024 – 2026 |
| Management And Business Administration – MBA Specialization in Finance and Business Complementary training in management and administration to develop entrepreneurial and leadership skills. GPA 4.0 / 5.0 | Le Mans University (France) 2024 – 2025 |
| Engineering Degree – M.Sc Specialization in Embedded Systems and Real-time In-depth training in embedded systems, real-time programming, hardware architecture and IoT solution development. GPA 4.0 / 4.0 | ENSIM – Engineering School (France) 2022 – 2024 |
| Preparatory Classes for Engineering Schools Mathematics and Physics (CPGE) Intensive 2 years training in mathematics and physics, development of analytical and complex problem-solving capabilities. | École Polytechnique (Ouagadougou) 2020 – 2022 |

COMPETITIONS AND ACADEMIC EXCELLENCE

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| Intern Fellowship at UQAC Mitacs is a Canadian non-profit organization that builds bridges between academia, industry, and government to promote innovation, research, and talent development. It provides research funding and international mobility opportunities to students, postdocs, and academic institutions. Mitacs plays a key role in Canada's innovation ecosystem by supporting applied research projects that have real-world impact. | Mitacs (Canada) 2025 |
| Winner France Cup of Robotics The France Robotics Cup (Coupe de France de Robotique) is one of the largest amateur robotics competitions in Europe. It brings together hundreds of student teams from engineering schools, universities, high schools, and robotics clubs every year. | Science Planet (France) 2024 |
| Winner of the (Nous les ambitieuses) "Nous, les Ambitieuses" (translated as "We, the Ambitious Women") is a French competition and acceleration program dedicated to supporting female entrepreneurs in the tech and social innovation sectors. Its mission is to empower women who are building purpose-driven startups that tackle pressing social, societal, or environmental challenges. | Monaco S.A.S Prince Albert 2 (France) 2024 |

REMARKS

Private and confidential projects developed during consulting missions are not disclosed here to respect client confidentiality agreements and non-disclosure terms.

Sport

Hiking

Scout