```
   <h1>SEYDOU DIALLO</h1>

   <strong>Software Developer | AI/NLP Enthusiast | Linux Administrator |
Community Builder</strong>

   <ul>
     <li><strong>Address:</strong> Somone, Senegal</li>
     <li><strong>Email:</strong> <a
href="mailto:mail.seydou.diallo@gmail.com">mail.seydou.diallo@gmail.com<
/a></li>
     <li><strong>GitHub:</strong> <a
href="https://github.com/sudoping01">sudoping01</a></li>
     <li><strong>HuggingFace:</strong> <a
href="https://huggingface.co/sudoping01">sudoping01</a></li>
     <li><strong>LinkedIn:</strong> <a
href="https://www.linkedin.com/in/seydou-diallo-08ab311ba/">seydou
diallo</a></li>
   </ul>

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PROF

PROFILE

Passion for transforming real-world challenges into technological solutions. Strong background in software development, with ongoing work in Artificial Intelligence for social impact. Committed to innovation, entrepreneurship, and building communities that use technology for progress and inclusion. Founder of MALIBA-AI and co-founder of DJELIA, initiatives creating AI systems for African languages and real-world accessibility.

EDUCATION

Dakar American University of Science and Technology | Dakar, Senegal
Computer Science | 2024 - Present

Ecole Normal D'Enseignment Technique et Professional | Bamako, MALI
Electronic Engineering | 2023 - 2024

Technical Baccalaureate in Electronic Engineering | Mali
Industrial Sciences and Technologies | July 2022

- **First National** in Malian Technical Baccalaureate session
- Specialization: Electronic Engineering

PROFESSIONAL EXPERIENCE

Co-Founder | DJELIA

2024 – Present

- Leading the full AI model lifecycle from data collection and preparation to training, evaluation, and deployment.
- Developing and maintaining production-grade **ASR**, **TTS**, and **MT**, **LLM** models for the Bambara language.
- Building **developer SDKs and APIs** that allow seamless integration of Djelia's language technologies into third-party applications.
- Driving accessibility and innovation by making AI services available to millions of Bambara speakers and local developers.

Founder | MALIBA-AI Community

2025 – Present

- Leading AI research and development efforts for indigenous Malian languages, from data collection to final model.
- Developing and maintaining **ASR**, **TTS**,**LLM** and **MT** models for Malian languages.
- Building **inference SDKs** and **serving servers** to enable developers and communities to easily integrate MALIBA-AI models into their products and solutions.
- Driving a community-led initiative to democratize AI access across education, healthcare, agriculture, and local businesses.
- Promoting digital inclusion by creating **speech-first interfaces** for primarily oral languages.

Software Developer & AI Engineer | Caytu Robotics

2024 – Present

- Developing and maintaining a scalable **IoT ecosystem** for remote control and real-time video streaming and data monitoring.
- Building **multi-modal AI applications**, powering **Caytu Avatar**, enabling natural language interaction with any rest api include Caytu IoT Ecosystem.
- Creating tools and SDKs to allow seamless integration of AI services, automation workflows, and personal assistant features.

Robotics Team Member | Malian National Team

2021, 2023

- Represented Mali in international robotics competitions
- Collaborated on complex engineering projects and problem-solving challenges

RESEARCH PROJECTS

Large Language Models

MALIBA-LLM | Lead Developer | MALIBA-AI

- Built **MALIBA-LLM**, a fine-tuned version of google/gemma-3n-E2B-it and the **first open-source Large Language Model for Bambara (Bamanankan)**
- Supports **Bambara ↔ French/English** code-switching for technical terms, instruction following, conversational reasoning, knowledge retrieval, content generation, translation, mathematical reasoning, coding support, logical problem-solving, and Mali-specific knowledge
- Achieved **0.4952 validation loss**, ↓93.4% from initial 7.4595
- Designed for **education, translation, conversational AI, content generation, and accessibility** for 15M+ speakers in West Africa, as part of the MALIBA-AI project
- Model: maliba-llm

Speech Synthesis

Bambara Text-to-Speech | Lead Developer | MALIBA-AI

- Open-source, high-quality TTS system for Bambara with **4.2/5.0** subjective quality score
- Achieved **4.1/5.0** naturalness ratings with 10 authentic Bambara speakers
- Addresses digital exclusion crisis affecting 15+ million non-literate adults in sub-Saharan Africa
- Released via Hugging Face: MALIBA-AI/bambara-tts
- **8,712 downloads** on Hugging Face *(all-time, as of October 2025)*

MALIBA-TTS: Multilingual Speech Synthesis for Malian Languages | *Lead Contributor*

- Developed **text-to-speech (TTS) models** for six Malian languages: **Bambara, Boomu, Dogon, Pular, Songhoy, and Tamasheq**
- Based on **Meta's MMS-TTS** and **VITS**, optimized for **CPU inference** and **real-time synthesis**
- Enables **voice interfaces, education, and accessibility tools** across Mali
- Promotes **language inclusion and digital accessibility** under the *MALIBA-AI* initiative
- Models: huggingface.co/MALIBA-AI/malian-tts

GAIFE: Generative AI for Education

Co-Author | Bill & Melinda Gates Foundation Grand Challenges | RobotsMali

- Developed methodology using generative AI and automatic translation for children's educational materials
- Produced books and pedagogical content in Bambara, Mali's most widely spoken language
- Libraire

- [paper](#)

Bayelemabaga: Bambara Machine Translation

Data Processing | RobotsMali | RIT Partnershis

- First-ever machine translation model for Bambara-French language pairs
- Involved in data extraction, cleaning, and alignment of parallel corpora
- [Project Details](#)
- [Dataset](#)

Automatic Speech Recognition Systems

Wolof ASR Models | Lead Developer | CAYTU ROBOTICS

- Developed **whosper-large-v2** and **whosper-large** - most accurate open-source Wolof ASR models
- Achieved excellent performance in multilingual scenarios (Wolof, French, English) with
- Latest version (whosper-large-v2): **24% WER** and **11% CER** on 9-hour evaluation dataset
- **3,893 downloads** (whosper-large-v2) and **679 downloads** (whosper-large) in first week
- Models: [whosper-large-v2](#) | [whosper-large](#)

Bambara ASR Models | Lead Developer | MALIBA-AI

- Created **maliba-asr** series - outperforming all existing open-source Bambara ASR
- Latest version (maliba-asr-v2): **24.33% WER** and **12.45% CER** on 3-hour evaluation dataset
- Excels in code-switching scenarios between Bambara and English
- Latest Model : [bambara-asr-v1](#)

Songhay ASR Model | | Lead Developer | MALIBA-AI

- Built **songhay-asr-v1** - first ASR model for Songhay language
- Achieved **16.58% WER** and **4.63% CER** on test dataset
- Supports bilingual Songhay-French transcription
- Model: [songhoy-asr-v1](#)

PROF

IoT Assistant in Local Languages

Lead Developer | Caytu Robotics

- Built world's first IoT assistant operating fully in Wolof
- Designed scalable IoT ecosystem with remote control and real-time streaming
- Features workflow automation and multilingual support
- [Platform: caytu.link](#)
- Open-sourced architecture at Ndabax Senegal 2024

OPEN SOURCE CONTRIBUTIONS

Software Development Kits (SDKs)

NabooPay Payment Gateway SDKs | *Lead Developer & Maintainer*

- Python SDK: Built comprehensive SDK for Senegalese mobile money payments (Wave, Orange Money, Free Money)
- Node.js SDK: TypeScript-based SDK with full type definitions and automatic retry mechanisms
- Features: Transaction management, cashout operations, both synchronous and asynchronous support
- Code Source: Python SDK | Node.js SDK

Djelia AI Language Platform SDKs | *Lead Developer & Maintainer*

- Python SDK: Complete SDK for Bambara language AI (translation, ASR, TTS) with streaming support
- JavaScript SDK: Modern implementation for web and Node.js environments
- Features: Multi-language translation, real-time transcription streaming, natural TTS with speaker descriptions
- Code Source: Python SDK | JavaScript SDK

MALIBA-AI Bambara TTS SDK | *Lead Developer & Maintainer*

- Inference SDK for Bambara text-to-speech synthesis
- Production-ready inference system with 10 authentic speaker voices
- Optimized for educational platforms, accessibility tools, and voice interfaces
- Comprehensive documentation with usage examples and best practices
- Code Source: GitHub Repository

Infrastructure & Deployment Tools

Realtime Video/Audio WebRTC Streaming

- Enterprise-grade streaming solution containerized for easy deployment
- Enables low-latency cloud transmission from various sources
- Applications in remote monitoring, surveillance, telehealth, industrial IoT
- Code source: GitHub | Docker Hub

Wolof TTS Inference Server

- Deployment solution for first Wolof speech synthesis system
- Democratizes voice technology for Senegal's primary language
- Code Source: GitHub Repository

Adia_TTS Segmentation Algorithm

- Transformed research model into production-ready system
- Overcame character limitations while preserving voice quality
- Integrated into official model documentation
- Code Source: GitHub | HuggingFace Discussion

Additional projects: GitHub Profile

PREVIOUS VENTURES

KAALISI | Founder

AI-powered investment evaluation platform

- Developed scoring models assessing startups on financial performance, environmental impact, pandemic resilience, and youth employment
- Aimed to democratize access to capital through intelligent matchmaking

JAYAS Drone | Co-Founder

Drone-as-a-Service platform

- Built ready-to-fly drones and service infrastructure

TECHNICAL SKILLS

Programming Languages: Python, JavaScript, C/C++, Bash, Java

AI/ML Frameworks: PyTorch, Hugging Face Transformers, Whisper, FastAPI, Unsloth, Axolotl

Technologies: Docker, WebRTC, IoT, AWS, GCP, Linux Administration, git, Github

NLP Specializations: Speech Recognition (ASR), Text-to-Speech (TTS), Machine Translation (MT), Large Language Model (LLM)

Languages: Bambara (Native), French (Fluent), English (Fluent)

COMMUNITY LEADERSHIP

PROF

MALIBA-AI - Founder & Lead
Building comprehensive AI ecosystem for indigenous Malian languages. Focus on speech first technology, accessibility solutions, and democratizing AI benefits across education, healthcare, and business sectors.

Introduction to MALIBA-AI | Hugging Face Community | Github

References

Sebastien DIARRA — ML/AI Researcher
sebastien.diarra@gmail.com

Michael Leventhal — Founder & President, RobotsMali
m.leventhal@robotsmali.org

Allahsera Auguste Tapo- NLP Researcher, RIT

aat3261@g.rit.edu

Sidy Ndao Founder & President, Dakar American University of Science and Technology

sndao@daust.org

Abdoulaye Faye - Co-Founder & CTO, CAYTU Robotics

afaye@caytu.com