Isaac Owomugisha

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EXPERIENCE

- **Tunga** — Kampala, Uganda
  Backend Software Engineer (Django) — *Nov 2023 - Present*
  - **Developed AI-driven talent matching solution**: Built an intelligent system that matches job descriptions with the most suitable candidates in Tunga's talent pool using Retrieval Augmented Generation (RAG). The solution leverages OpenAI's completions API and Pinecone vector database to deliver high-quality candidate recommendations, significantly improving hiring efficiency and match accuracy.
  - **Enhanced invoicing system**: Implemented multi-line and multi-developer invoicing functionality, allowing clients to receive consolidated invoices with multiple line items instead of separate invoices for different services. This streamlined billing processes, improved financial workflow efficiency, and enhanced client satisfaction.
  - **Optimized platform performance**: Resolved "N + 1 query" issues across multiple endpoints, leading to improved performance of our backend API.
  - **Implemented developer and payment system enhancements:**:
    * Implemented profile export functionality, allowing developers to automatically generate CVs from their Tunga profiles.
    * Expanded payment options by enabling USD transactions (previously limited to EUR), reducing currency conversion fees for both Tunga and developers.

- **Sunbird AI** — Kampala, Uganda
  Software Engineer and Team Lead — *May 2020 - Oct 2023*
  - **Leadership**: Provided technical leadership and mentorship to a team of developers and interns, ensuring the successful productization of ML models and effective management of MLOps workflows.
  - **Model Deployment**: Spearheaded the deployment of language translation models to an Amazon Sagemaker endpoint, facilitating seamless integration through an API for external users. Later on, led the migration from Sagemaker to GCP Vertex AI. These models power the Sunbird API.
  - **Language Translation API**: Developed and led the implementation of the Sunbird AI API, offering language technology services including translation, speech recognition, and text-to-speech in Ugandan local languages. Currently, the API is being utilised by Ugandan companies within their applications and was used in the IndabaX language technology hackathon.
  - **Language Translation Frontend**: Revamped the front end of the Ugandan languages translation app, transitioning it from vanilla Javascript to React, thus enabling faster feature development and eliminating a whole class of state-related bugs. This app played a pivotal role in the successful launch of Sunbird AI.
  - **Noise Monitoring**: Established the end-to-end infrastructure (including back end and front end) for the Environmental Noise Monitoring System in Kampala and Entebbe. Subsequently, orchestrated the migration of core components from a self-hosted setup to AWS IoT, significantly enhancing reliability and robustness. The Mayor of Entebbe relies on this system for monitoring and mitigating noise in the city.

- **Andela** — Kampala, Uganda
  Software Engineer — *Aug. 2018 – Apr. 2020*
  - **Android development**: Built offline-functionality features for the Converge app (an internal meeting room management mobile app). Also improved how we wrote instrumented tests to mimic offline situations using the Test Butler library.
  - **Leadership**: Mentored new developers during their apprenticeship period by assigning them tasks, conducting code reviews and providing technical guidance.

- **Makerere University Data Science and Artficial Intelligence Lab** — Kampala, Uganda
  Software Engineer Intern — *Jun. 2017 – Sept. 2017*
  - **Android development**: Developed a photo-annotation feature in the Android White-Fly count app which helped farmers to annotate pictures of white-fly infested cassava leaves.

Education

- **Makerere University** — Kampala, Uganda
  Bachelor of Science in Computer Science — *Aug. 2015 - Apr. 2018*

- **Coursera Courses** — online

  - Machine Learning Specialization
  - Mathematics for Machine Learning
  - Deep Learning Specialization

Programming Skills

- **Languages**: Python, Javascript, Kotlin   **Technologies**: Django, React, FastAPI, AWS, GCP