

KANYESIGYE AKB

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PROFILE

Software engineer with 7+ years delivering data and web systems for national-scale government programmes. At the Uganda Bureau of Statistics I build the data pipelines, reporting layers and dashboards behind the Bureau's statistics estate, serving over 500,000 users across both internal and public-facing platforms — and run the cloud infrastructure that some sit on. I led the Bureau's adoption of AI for data processing, including Sanyu, a production service that answers questions and generates statistical briefs from 5,100+ official indicators. First Class honours in both degrees, with a 4.0/4.0 CGPA at Master's level.

TECHNICAL PROFICIENCIES

Data & BI: SQL (advanced — T-SQL, PL/SQL), dimensional modelling & star schemas, ETL / data pipelines, Power BI, Python data stack (pandas, NumPy), QGIS & spatial data

AI & Analytics: LLM tool-calling architectures, grounded question answering over statistical databases, automated report and document generation, ML model integration

Databases: Oracle, MS SQL Server, MySQL, SQLite, MongoDB, MS Access

Programming: Python, JavaScript, SQL, PHP, Dart, Java, C#, Kotlin, Swift, C

Cloud & DevOps: AWS, GCP, Docker, Git, CI/CD, Linux / RHEL, Nginx, Apache, pm2

Web & CMS: React, Next.js, Node.js, Django, WordPress, Drupal, CodeIgniter, Oracle APEX, Figma

Testing & QA: pytest, node:test, automated regression suites, monitoring tooling, UAT support

WORK EXPERIENCE

Software Engineer, Uganda Bureau of Statistics

Dec 2022 – Present

- Built and operate Sanyu (statistics.ubos.org/sanyu), the Bureau's production AI statistics service — grounded question answering and automated statistical brief generation over a unified catalogue of 5,100+ indicators drawn from six national datasets, with cited sources and no fabricated figures.
- Re-architected that service from vector search to structured LLM tool-calling on Node.js and SQLite, cutting cold start from 30–60 seconds to around 40 milliseconds and data queries to sub-millisecond; deployed on Linux under Nginx and pm2.
- Built the ingestion and automated reporting pipeline for national statistical data in Python and SQL, plus a PDF table-extraction process making 2,200+ tables from published survey reports queryable and citeable.
- Led a team of 3 to deliver the UBOS dissemination platform including dashboards, maps and tabulations and serving over 500,000 public users.
- Led the Bureau's adoption of AI for data processing, applying automated classification to the coding of census and survey responses and removing months of manual work.

- Designed and implemented the data collection instruments used for national enumeration, and wrote Python and QGIS tooling that accelerated map preparation for the GIS team.
- Built and operate the Bureau's internal field staff management system (Next.js, MongoDB), serving over 200,000 census personnel nationwide.
- Wrote the automated testing and monitoring tooling behind these systems, improving issue identification and resolution speed by over 80%; support UAT and change management documentation.
- Architected and manage the Bureau's AWS and GCP estate — Docker deployments, custom CI chains, and a shared outbound proxy consolidating external service access and traffic filtering.
- Ranked best-performing staff member on 2024 Census appraisal.

Lead Developer, Makerere at 100 — Makerere University

Feb – Oct 2022

- Led development of the university's centennial platform (PHP, custom WordPress theme), serving over 12,000 unique users.

Lead App Developer, Youth Action Handbook — European Union & Konrad-Adenauer-Stiftung

Oct 2021 – Mar 2022

- Led development of a bilingual Flutter application for the Great Lakes Youth Network for Dialogue and Peace, shipped on Android, iOS and web in Congo, Rwanda, and Uganda.

Lead Developer, Uchaguzi Voter Education Platform — Konrad-Adenauer-Stiftung & Ministry of ICT

Nov 2020 – Feb 2021

- Led delivery of a mobile app, chatbot and website (Flutter, Drupal, PHP, Python) that engaged over 10,000 users during Uganda's 2021 general elections.

IT Officer, Government Citizen Interaction Centre — Ministry of ICT & National Guidance

Jan 2019 – Feb 2021

- Built and maintained the Ugandan government's focal news platform on Drupal and PHP.
- Trained District Technical Officers nationwide on IT and digital communications, increasing the number of districts with active websites by 30%.

IT Intern, Airtel Uganda

Jun 2017 – Feb 2018

- Led the intern team in delivering an HR management system on Oracle Application Express using PL/SQL and JavaScript, cutting leave approval from several days to under an hour.

EDUCATION

Eastern Mediterranean University, Cyprus — MSc Information Technology (First Class, Hons.)

Feb 2021 – Jul 2022

- Graduated with a 4.0/4.0 CGPA; coursework extensively covered project management principles. Developed a Flutter plugin supporting password-less authentication to FIDO2 standards.

Makerere University — Bachelor's Degree (First Class, Hons.)

Sep 2015 – Jan 2019

- Graduated as Class Valedictorian.

Artificial Intelligence Research Lab, Makerere University

Jan – Jul 2019

- Research on cassava disease identification and land value prediction models.

CERTIFICATIONS

- AWS Certified Cloud Practitioner — Amazon Web Services, September 2025 (valid to September 2028).
- Microsoft Certified: Azure Data Fundamentals (DP-900) — in progress.

REFERENCES

Ivan Atwiine — Head of Department, Digital Solutions, Uganda Bureau of Statistics · Ivan.atwiine@ubos.org

Anna Reismann — Konrad Adenauer Stiftung Uganda & South Sudan · anna.reismann@kas.de

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