

Sserunjogi Richard

[s](#)sserurich | [in](#) sserunjogi-richard | [g](#)sserunjogirichard.com | [e](#)sserurich@gmail.com

SUMMARY

I am passionate about contributing towards positive change that improves the lives of all people in the world through innovation, science, technology & talent discovery. I am interested in advancing artificial intelligence research and its application for social good.

EDUCATION

Master of Science in Computer Science **Makerere University 2017 - 2020**

- Thesis: Deep Neural Networks for Air Quality Prediction and Analysis

Bachelors of Science in Computer Science **Makerere University 2012 - 2015**

- Final year project: Context Aware and Real-time Timetable

WORK EXPERIENCE

Data Science Lead - AirQo-Makerere University **August 2021 - Present**

- Planning, coordinating and overall oversight of data-related activities
- Providing the necessary technical and team leadership
- Contributing towards various research projects
- Organising and coordinating various AI/data workshops and STEM and data challenges

Shadow Program Committee - ACM COMPASS 2021 **April 2021 - July 2021**

- Reviewing papers and carrying out administrative works
- Nominating papers for best paper award

Course Instructor - Makerere University **February 2020 – Present**

- Co-Instruct Big Bio-Data Analysis course for MSc & PhD in BioInformatics programme
- Contributing towards various research projects

Data Scientist - AirQo-Makerere University **January 2019 - July 2021**

- Carrying out data analysis and visualisation
- Developing and refining machine learning models
- Contributing towards research initiatives

Graduate Teaching Assistant - Makerere University **November 2018 – December 2018**

- Advanced Java Programming course for MSc Computer Science & Msc Health Informatics

PUBLICATIONS

- [1] P. Adong, E. Bainomugisha, D. Okure, and **Sserunjogi, Richard**, “Applying machine learning for large scale field calibration of low-cost pm2.5 and pm10 air pollution sensors,” *Applied AI Letters*, vol. 3, no. 3, e76, 2022.
- [2] P. Green, D. Okure, P. Adong, **Sserunjogi, Richard**, and E. Bainomugisha, “Exploring pm2.5 variations from calibrated low-cost sensor network in greater kampala, during covid-19 imposed lockdown restrictions: Lessons for policy,” *Clean Air Journal*, vol. 32, no. 1, pp. 1–14, 2022.

- [3] D. Okure, J. Ssematimba, **Sserunjogi, Richard**, N. L. Gracia, M. E. Soppelsa, and E. Bainomugisha, “Characterization of ambient air quality in selected urban areas in uganda using low-cost sensing and measurement technologies,” *Environmental Science & Technology*, vol. 56, no. 6, pp. 3324–3339, 2022.
- [4] **Sserunjogi, Richard**, J. Ssematimba, D. Okure, D. Ogenrwot, P. Adong, L. Muyama, N. Nsimbe, M. Bbaale, and E. Bainomugisha, “Seeing the air in detail: Hyperlocal air quality dataset collected from spatially distributed airqo network,” *Data in Brief*, vol. 44, p. 108 512, 2022.
- [5] C. Stoddart, L. Shrack, **Sserunjogi, Richard**, U. Abdul-Ganiy, E. Bainomugisha, D. Okure, R. Misener, J. P. Folch, and R. Sedgwick, “Gaussian processes for monitoring air-quality in kampala,” *arXiv preprint arXiv:2311.16625*, 2023.
- [6] O. Ghaffarpasand, D. Okure, P. Green, S. Sayyahi, P. Adong, **Sserunjogi, Richard**, E. Bainomugisha, and F. D. Pope, “The impact of urban mobility on air pollution in kampala, an exemplar sub-saharan african city,” *Atmospheric Pollution Research*, vol. 15, no. 4, p. 102 057, 2024.
- [7] G. Okello, R. Nantanda, L. Tatah, **Sserunjogi, Richard**, O. Johnson, B. Awokola, D. Okure, M. Thondoo, P. Green, O. Babajide, *et al.*, “Association between ambient air pollution and respiratory health in kampala, uganda: Implications for policy and practice,” *Urban Climate*, vol. 58, p. 102 128, 2024.
- [8] L. Muyama, E. Bainomugisha, D. Okure, and **Sserunjogi, Richard**, “Using gaussian processes for spatial prediction of outdoor air pollution based on calibrated data from distributed low-cost sensor networks,” Manuscript submitted for publication.

PRESENTATIONS, WORKSHOPS & CONFERENCES

Deep Learning Indaba

September 2024 - Dakar, Senegal

- Tutor for AI in Biology practical session.
- Actively participated in the various sessions at the conference.

CLEAN-Air Forum

July 2024 - Lagos, Nigeria

- Panellist on on data ecosystems day where I briefly shared about low-cost sensor use progress and lessons learned and also highlighted the need for complementing low cost sensors with satellite observations by leveraging the advances in machine learning and AI.
- Co-organised the forum

Mozilla Technology Fund Summit & Mozfest House

June 2024 - Amsterdam, Netherlands

- Presentation on estimating and validating PM_{2.5} levels using satellite and ground observations in selected African cities.

AirQo African Air Quality Prediction Challenge Webinar

April 2024 - Virtual

- Presentation about AirQo and introduction of the African Air Quality Prediction Challenge, which focuses on estimating and validating PM_{2.5} levels using satellite and ground observations in selected African cities for Environmental Justice.

Guest Lecture at Yale University

February 2024 - Virtual

- Guest lecture to graduate students from School of Public Health and Yale School of the Environment.
- Presentation on the scalable experiences of how AirQo leverages advances in low-cost technologies for sustainable air quality monitoring and evidence-informed action in African cities

Workshop on Data Science Practices & Processes at AirQo January 2024 - Kampala, Uganda

- Co-organised the workshop that included sessions on data collection and data quality assurance processes, AI Impact at AirQo, data visualisation, digital tools and the research processes.
- Presentation on advancing advancing knowledge (research processes) and collaborations for long-term sustainability

Neural Information Processing Systems(NeurIPS) December 2023 - USA [Unable to travel]

- Two posters at the Black in AI workshop i.e. Using Gaussian Processes for Spatial Prediction of Outdoor Air Pollution Based on Calibrated Data From Distributed Low-Cost Sensor Networks and AirQalibrate: A Machine Learning-Based Field Calibration Tool for Low-Cost Air Quality Sensors.
- Presentation on Gaussian Processes for Monitoring Air-Quality in Kampala in Workshop on Tackling Climate Change with Machine Learning

United Nations Climate Change Conference (COP28) December 2023 - Dubai, UAE

- Co-organised 3 sessions i.e. using AI and digital solutions as enablers for climate action, investing in Africa's digital future for climate Action, unlocking climate health equity using digital innovations.
- Supported negotiations on technology mechanisms where AI4ClimateAction was highly discussed.

Data Access & Quality Assurance Workshop September 2023 - Naivasha, Kenya

- Presentation and demonstration session on AI and digital solutions for data quality assurance.

Deep Learning Indaba September 2023 - Accra, Ghana

- Presented on data visualization and analysis at deep learning indabax Uganda as a pre-event.
- Two poster presentations at the main indaba conference
- Participated in the review and evaluation of posters at the conference.

Air Pollution and its Health Impacts in Africa June 2023 - Kigali, Rwanda

- Presentation on the scalable experiences of how AirQo leverages advances in low-cost technologies and AI for sustainable air quality monitoring and evidence-informed action in African cities

AAAI Conference on Artificial Intelligence February 2023 - (Virtual)

- Presented about leveraging artificial intelligence solutions to achieve cleaner air in African cities during the workshop for promoting meaningful, beneficial and informed participation of African communities in the development and utilization of AI solutions.

United Nations Climate Change Conference(COP27) November 2022-Sharm El-Sheikh,Egypt

- Presented data outputs from multi-city Cityzens4CleanAir advocacy campaign and findings from the technical report titled "Citizen Science Insights on Air Quality from Three Cities in Africa".

AI for the Social Good February - March 2022 - Dagstuhl, Germany

- Presentation on AirQo's use case for estimating air quality in places with no sensors (spatial temporal modelling of air quality using Gaussian Process)

Data Science Africa October 2019 - Accra, Ghana

- Presentation on IoT data visualization under the Fundamentals of IoT Session

ACM Conference on Computing and Sustainable Societies July 2019 - Accra, Ghana

- Poster presentation titled "Deep Neural Networks for Air Quality Prediction and Analysis"

AWARDS & GRANTS

- Google AI Impact Grantee - 2019 (Under AirQo)
- Mozilla Technical Fund Awardee - 2024