

Richard Sserunjogi, Data Science Lead - AirQo

Department of Computer Science, Makerere University

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Professional Preparation

Makerere University (Kampala, Uganda), Computer Science, BSc., 2016

Makerere University (Kampala, Uganda), Computer Science, MSc., 2020

Professional Appointments

Data Science Lead, AirQo, Makerere University, 2021–present

Course Instructor (Big-Bio Data Analysis), ACE, Makerere University, 2020–present

Data Scientist, AirQo, Makerere University, 2019–2021

Graduate Teaching Assistant, Makerere University, 2018–2018

Scientific and Technical Background and Management Experience

Richard has ~4 years of research experience in academia and international collaborations. His research is dedicated to advancing scientific knowledge of AI and its applications in the environmental and health domain. His current focus is improving air quality monitoring and management in African cities. He has played a vital role in implementing large-scale field calibrations of low-cost air quality sensors, optimizing their deployment for maximum data accuracy and coverage, and employing advanced algorithms for forecasting and predicting air quality in regions without direct monitoring capabilities. His research led to ~5 peer-reviewed journal publications, 85 citations, an h-index of 4 from Google Scholar. In addition to his work on AI and its application to various fields, Richard's research interests extend to software engineering with the aim of improving the robustness and scalability of software systems. He has served on organizing committees for specific conferences, such as the CLEAN-Air Forum and served as shadow program committee member for ACM COMPASS.

Relevant Referred Journal Publications

P. Adong, E. Bainomugisha, D. Okure, and **R. Sserunjogi**, “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.

D. Okure, J. Ssematimba, **R. Sserunjogi**, 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.

R. Sserunjogi, 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.

P. Green, D. Okure, P. Adong, **R. Sserunjogi**, 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.

O. Ghaffarpassand, D. Okure, P. Green, S. Sayyahi, P. Adong, **R. Sserunjogi**, 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.

Relevant Scholarly Activities, Honors, and Awards

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