Allan Vikiru

A software engineer and researcher with a career objective of solving problems by conducting informative research and applying effective solutions in Computer Science.

Education & Training

May 2022 – Present
MSc. Information Technology (Business Intelligence & Data Analytics Option), *Strathmore University*

- Awarded as a scholarship as part of the graduate assistantship.

March 2017 – September 2021
BSc. Informatics and Computer Science, *Strathmore University*

- Award: First Class Honours

January 2023 – June 2023
Teaching and Learning for Challenge Driven Education in a Global Context, *KTH Royal Institute of Technology*

- Training in Challenge-Driven methodology in education towards developing solutions for sustainable development.

September 2022
Python in Practice, *Obuda University*

- Trained in Python programming concepts.

May 2022
IT Essentials Instructor, *AFRALTI*

- Trained in CISCO IT Essentials course in fundamental computing skills and teaching methods in Computer Science or Information Technology

Work Experience

March 2022 – Current
Graduate Assistant, *School of Computing and Engineering Sciences, Strathmore University*

- Providing support to faculty in conducting tutorials for courses as assigned.
- Actively organised and conducted research dissemination seminars such as workshops and engaged in research activities such as data collection and analysis and paper writing.
- Supervised student projects based on system development and challenge-driven methodologies

Contact

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- vikiruallan12@gmail.com
- allanvikiru.github.io
- Allan Vikiru
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Skills

- **Data Science and Artificial Intelligence:** Python, R, MATLAB, and Microsoft Power BI; Techniques: Data Exploration and Visualisation, Regression Modelling, Neural Net Modelling, Association Analysis
- **Internet-of-Things:** C/C++, Arduino, ThingSpeak and Azure IoT; Protocols & Networks: MQTT, HTTP, GSM, WiFi, LoRaWAN
- **Spatial Data Analysis:** R, QGIS; Techniques: Spatial Data Exploration, Regression Kriging, Geostatistical Methods
- **Software Engineering:** System Analysis and Design, Agile, Scrum & Prototyping Models, Object Oriented Development
- **Web Development:** Sass, JavaScript, PHP, MySQL, Node.js, Laravel
- **Cloud Engineering**: Git, Docker, Heroku, AWS, Microsoft Azure, Google Analytics
- **Technical Writing & System Documentation:** Grant Proposal Writing, Technical Research Paper Writing

Research Interests

- Internet-of Things and Robotics
- Machine Learning
- Health Informatics

Work Experience

January 2022 – March 2022
Software Developer, *IoT Research Lab,*
@iLabAfrica

- Under the software development team, handling application design as well as analytics for data collected by IoT powered devices.
- Implemented an end-to-end IoT based solution that applies LoRaWAN.
- Carried out code reviews and feature development on a web dashboard in Vue.js and Node.js for an ongoing research project.

May 2021 – November 2021
Corporate IT Systems Assistant, *Quantum Facilities Management*

- Part of the IT team tasked with creating and maintaining solutions that support the firm's core business processes.
- Carried out code reviews and SEO tools for the business site that significantly improved the site's navigation experience as well as overall engagement by 70%.
- Designed and built a web application in PHP and JavaScript to handle core marketing records.

June 2020 – May 2021
Freelance Web Developer, *[Seasonal]*

- Designed, developed, debugged, and maintained various WordPress based applications such as e-commerce platforms, blogs, and business sites.
- Implemented and reviewed custom plugins to carry out various functions on WordPress admin panel.
- Applied techniques in SEO on a project which brought about a 50% increment of site engagement.

January 2020 – March 2020
Software Developer, *Slash Dot Labs*

- Part of the frontend development team, tasked with designing, developing, debugging, and documenting Laravel and WordPress applications.
- Carried out code reviews and debugging to revitalise internal domain registration processes.
- Served as Team Lead for a project that involved rebuilding ecommerce and retail platforms that serve 100+ customers per month; that resulted in positive end user satisfaction and development team.

Teaching Experience

- Introduction to Programming (C++, Python) [Undergraduate]
- Information Systems Project (Challenge-Based Learning Methodology) [Supervision: Undergraduate]
- Information Systems Project (System Development Methodology) [Supervision: Undergraduate]

Research Experience

- Member for a project on dissemination on nutritional information across Kenya, funded by National Research Fund [2023 - Present]
- Member for a project on monitoring on illegal logging activities using sound detection techniques, funded by Climate Change AI [2022 - Present]

University Administrative Experience

- Research Lab Manager of the Makerspace Lab, School of Computing and Engineering Sciences, Strathmore University [2022- Present]
- Committee Member for the 2022 BBIT Curriculum Review, School of Computing and Engineering Sciences, Strathmore University [2022]
- Participated in resource verification for PhD Computer Science course by Commission for University Education, Strathmore University [2022]

Presentations and Publications

- Workshop presentation on '*Programming for IoT using Scratch on Raspberry Pi 400*' for the Fundamentals of Raspberry Pi workshop held at Strathmore University on 10th November 2023.
- Simiyu, D., Vikiru, A., Muchiri, H., Gu, F. & Butime, J. (2023). A Chainsaw-sound Recognition Model for Detecting Illegal Logging Activities in Forests. Paper presented to the UNIfied 2023 Conference, Huddersfield, 29th August – 1st September.
- Vikiru, A., & Khakata, E. (2023). A Wearable Sensor System to Detect the Risk of Fireground Injuries among Firefighters. Paper presented to 5th International Symposium on Advanced Electrical and Communication Technologies, Casablanca, 15th March – 17th March.
- Vikiru, A., Muiruri, M., & Ateya, I. (2023). An Overview on Cloud Distributed Databases for Business Environments (arXiv:2301.10673). arXiv. https://doi.org/10.48550/arXiv.2301.10673.
- Vikiru, A., & Khakata, E. (2021). Detecting the Risk of Fireground Injuries among Firefighters using IoT. Paper presented to 6th Strathmore International Mathematics Conference, Nairobi, 28th June -2nd July.
- Vikiru, A., Nyairo C., & Kirui, J. (2019). Automated Estate Services Management System. Paper presented to 17th ICT Conference, Nairobi, 21st - 22nd March.

Competitions & Awards

July 2022
Kilimani Prop-Tech Hackathon, *Kilimani Project Foundation and @iLabAfrica*

Co-developed and presented a solution that implements IoT and data analytics for monitoring levels of noise pollution within a residential area.

October 2021
Africa IoT and AI Challenge, *IEEE & BENYA*

Selected among the top ten projects in the Kenyan chapter. Presented a solution that implements Internet of Things technology to assist firefighters in determining the risk of sustaining fireground injuries.

June 2019
Konica Minolta National University Contest, *Express Automation*

Emerged 1st Runners Up nationally as part of a team of three; by developing a solution based on augmented reality technology, that sensitises the importance of recycling.