Edwin Kayang

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Education

Arizona State University *August 2023 – Present*
PhD Student in Computer Science

University of Ghana *Aug 2018 – Mar 2023*
BS in Computer Engineering

- First Class Honours
- CGPA: 3.75/4.0

Research Interessts

Program Analysis and Instrumentation, Compilers, Domain Specific Languages, System Security, HW/SW Codesign, Machine Learning

Experience

Research Assistant *Tempe, AZ*
Secure, Trusted and Assured Microelectronics (STAM) Center, Arizona State University, under Prof. Michel A. Kinsy *Aug 2023 – Present*

- Developing tools and algorithms to ensure memory safety in legacy applications, while maintaining performance.
- Investigating algorithms to facilitate profile-guided optimization and compiler autotuning.

Innovations Graduate Executive *Accra, Ghana*
4th-IR *June 2022 – Aug 2023*

- Developed and integrated application programming interfaces (APIs) for machine learning models into a model benchmarking platform.
- Maintained servers for training, testing, and deploying machine learning models.
- Surveyed the machine learning model landscape to rank the most suitable models for 20 different machine learning tasks.

SuaCode Fellow *Remote*
Nsesa Foundation *June 2021 – Sept 2021*

- Contributed to a research paper detailing the design and implementation of an automated grading tool
- Executed test cases and made bug fixes for an automated grading tool

Publications

Panoptes: A Framework for Profile Clustering and Context-Aware Binary Optimization *(Just Accepted)* Dec 2025
Edwin Kayang, Eric Jahns, Mishel Jyothis Paul, Michel A. Kinsy
ACM/IEEE International Conference on Software Engineering

AQUILA: A Flexible Architecture Guideline for Building Custom Distributed Systems Testbeds *(Just Accepted)* Sept 2025
Luigi Mastromauro, ***Edwin Kayang***, Mishel Jyothis Paul, Eric Jahns, Muslum Ozgur Ozmen, Michel A. Kinsy
IEEE/IFIP International Conference on Embedded and Ubiquitous Computing

R-Visor: An Extensible Dynamic Binary Instrumentation and Analysis Framework for Open Instruction Set Architectures June 2025

Edwin Kayang, Mishel Jyothis Paul, Eric Jahns, Muslum Ozgur Ozmen, Milan Stojkov, Kevin Rudd, Michel A. Kinsy
ACM SIGPLAN/SIGBED Conference on Languages Compilers Tools and Theory for Embedded Systems

doi.org/10.1145/3735452.3735522

Autograd: Automated grading software for mobile game assignments in Suacode courses Nov 2021
Prince Steven Annor, ***Edwin Kayang***, Samuel Boateng, George Boateng
Computer Science Education Research Conference
doi.org/10.1145/3507923.3507954

Invited Talks

RAIL: RISC-V Analysis and Instrumentation Library Apr 2024
Latch-Up 2024, The FOSSi Foundation

Professional Affiliations

Tribe Lead, African PhD Students Network at ASU Aug 2025 - Present

Shadow PC Reviewer, International Conference on Software Engineering (ICSE) Oct 2025

IT/Publications Head, Enactus, University of Ghana Oct 2021 - June 2023

Lead, Google Developer Student Clubs, University of Ghana Oct 2020 - Aug 2021

Volunteer Activities

Coding and Arduino Facilitator, Project iSWEST, Accra July 2019 - Aug 2019

Coding Facilitator, Suacode Africa 2020, Online May 2020 - July 2020

Technologies

Languages: C, C++, RISC-V Assembly, Python, JavaScript, Rust

Technologies: LLVM, Intel Pin, Tensorflow, PyTorch React/ReactNative, NodeJS, FastAPI, Flask, Git

References

Available Upon Request