

KWABENA ADU-DUODU (MR.)

4th year PhD in Computer Science, Newcastle University, UK

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DOCTOR OF PHILOSOPHY (PHD) RESEARCH

A Trusted End-of-life Decision-Making Framework for Circular Supply Chains

School of Computing, Newcastle University

September 2022 – Present Newcastle University, UK

- Promoting circularity in construction supply chains via digitisation.
- Developed the Circular Construction Product Ontology (CCPO) for product provenance and end-of-life decision making.
- Produced the Human-in-the-loop Semantic Middleware (HiLSeM). A SAAS model for automated compliance assessments for safe reuse of construction products.
- Incorporated Polkadot's Ink smart contracts for trusted and non-repudiable product passports and compliance data.
- Multiple top publications from PhD research.

EXPERIENCES

Research Software Technician (EPSRC Research Project)

School of Computing, Newcastle University

March 2020 – August 2022 UK

- Designed a scalable IoT big-data platform for a university Smart Building, providing APIs and web-based analytics for real-time sensor data.
- Contributed to CI/CD pipelines, version control, automated deployment, and collaborative software development workflows.
- Delivered technical solutions in multidisciplinary research teams and communicated results to academic and industry stakeholders.
- Research Projects Experience:**
 - Blockchain-based GDPR-compliant multi-cloud data governance system (Ethereum) (PACE – EPSRC).
 - Real-time social media data pipeline for disaster monitoring (Landslide – NERC).
 - Edge resource coordination and load-balancing for IoT-Edge-Cloud systems (Osmotic MindSphere – Research England).
 - Large-scale smart building data integration for 10,000+ sensors with API access (Newcastle Urban Sciences Building).

Customer Support Engineer/ Onsite Engineer

Huawei Technologies

August 2014 – August 2018 Ghana

- Software delivery: Cloud payment system (CPS) deployment; Integration with Oracle DB, external client systems (e.g. SMSC, USSD, STK, Bank)
- Onsite technical support, maintenance operations (e.g patch installation, expansions).
- Platform training for staff.
- Developed technical solutions (software analyst) to customers' requirements.
- Worked in the role of project manager for a number of small projects.

SKILLS

Ontology Engineering (OWL2DL,RDF,RDFS) Knowledge Graphs

Semantic Web Technologies Protege GraphDB SWRL Drools

Cloud software engineering IoT Polkadot C/C++ Java Maven

Python HTML CSS SQL Oracle GoLang Docker VmWare

API/Webservices Linux MQTT JavaScript jQuery Git Flask

Blockchain Solidity Ethereum

PUBLICATIONS

List of publications can be found on my google scholar profile:
<https://scholar.google.com/citations?user=vKDqmcEAAAAJ&hl=en>

EDUCATION

Advanced Computer Science (MSc)

Newcastle University, UK

September 2018 – August 2019

- Grade: Pass with Distinction | 76.1%

Computer Engineering (BSc.)

Kwame Nkrumah University of Science & Technology, Ghana

September 2010 – August 2014

- CWA (69.37%)

TEACHING EXPERIENCE

Entreprise Middleware (Masters level)

java, quarkus, redhat openshift

2022 – Present Newcastle University

- MSc. coursework supervision & marking for an online travel agency system (customer bookings for hotel, flight and taxi)

Internet of Things (Masters)

docker, emqx, python, rabbitmq, visualizer

2020 – 2025 Newcastle University

- MSc. coursework supervision & marking for a three-tiered (IoT/edge/cloud) infrastructure. Building data is scraped and transported to the cloud via dedicated pipelines. The data is then fed into an ML model for predictions and visualisation.

Computer Networking

systems basic networking

2024 Newcastle University

- MSc. coursework supervision & marking for basic short tutorial tasks on networking fundamentals like routing, communication algorithms, OSI-layers and the use of a network simulator.

ADDITIONAL INFO

- Languages
 - English (native)
 - Twi (mother tongue)
 - French (50%)
- Outdoorsy - hiking, running, nature lover

REFERENCES

Will be made available on request.