AGHOGHOMENA AKASUKPE

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PROFESSIONAL OVERVIEW

Cybersecurity and AI Engineer/Researcher with a strong focus on Agentic AI security and hands-on penetration testing. I combine deep technical expertise with active research in emerging threats, aiming to bridge the gap between AI innovation and secure implementation. Certified in AWS Machine Learning and Security+, and actively pursuing advanced offensive security credentials including OSWE, OSEP, and CISSP. I bring a methodical, curious, and driven mindset to every challenge—committed to securing the future of intelligent systems.

EDUCATION

Masters of Science, Computer Science   **January 2025 - Present**

Ontario Tech University   *Oshawa, ON, Canada*

- **Area of Specialization:** Networking and IT Security
- **Research Focus:** Cyber Security, Artificial Intelligence, Machine Learning and Deep Learning
- **Supervisor(s):** Professor Miguel Vargas Martin(Link Here) and Dr Li Yang(Link Here).

Bachelor of Science, Computer Science   **September 2019 - June 2023**

Babcock University   *Ogun state, Nigeria*

- **Relevant Coursework:** Algorithms and Data Structures, Artificial Intelligence and Applications, Machine Learning with Python, Database System Design-Implementation and Management, Linux System Administration, Modeling and Simulations, Information Theory and Data Communication Systems, Computer Organization and Architecture, Statistical Methods I/II, Numerical Methods And Analysis I/II, Discrete Mathematics, Programming in C/C++.
- **CGPA:** 4.88 / 5.0 (Summa Cum Laude).
- **Class Rank:** Top 1%.

EXPERIENCE

CyberSecurity & AI Researcher (Graduate) - Full time - Onsite   **January 2025 - Present**

Ontario Tech University   **Oshawa, ON, Canada**

- Conducted groundbreaking research on adversarial machine learning (AML), focusing on model poisoning and evasion attacks, and developed novel defense strategies to enhance cybersecurity posture of critical systems.
- Spearheaded experimental research on leveraging Large Language Models (LLMs) for financial auditing, exploring the integration of LLM agents within complex multi-agent auditing frameworks.
- Collaborated with multidisciplinary teams, including three faculty advisors, to explore cutting-edge advancements in adversarial attacks and defenses, contributing to the broader cybersecurity research community.
- Curated and critically reviewed 50+ technical papers on AML, delving into topics like LLM penetration testing, federated learning, and defensive mechanisms against data poisoning and evasion techniques.
- Contributed to the development of a framework for secure machine learning models in adversarial environments, focusing on scalability and robustness in high-stakes industries.

Software Developer (Healthcare) - Full time - Hybrid   **Sep 2023 - Nov 2024**

Cavista Technologies Limited   **Dallas, Texas, United States**

- Analyzed and translated Health Care Claim Professional (837) Companion Guides to inform the development of parsing engine code, enhancing support for diverse patient claim data segments.
- Integrated custom models and parsers with EdiWeave to process and interpret complex patient claim data files, expanding system capabilities and ensuring accurate data handling.
- Conducted comprehensive test case mocking and testing using NSubstitute, Fluent Assertions, and Xunit, ensuring robust and reliable code quality through thorough unit and integration testing.
- Optimized SQL queries in Entity Framework, leveraging Language Integrated Query (LINQ) syntax and utilizing

AsNoTracking for improved performance. Conducted in-depth query analysis with LINQPad to identify and resolve inefficiencies.

- Collaborated with Quality Assurance (QA) Engineers to conduct post-deployment ticket testing across development, staging and production environments utilizing tools like Kibana to analyze logs in each unique environment.

- Implemented techniques such as Lazy Caching and Pseudo-random string generation to handle race conditions, leading to an 80% improvement in processes.

- Contributed to backlog refinement, prioritization, and estimation on various Jira Software, story point estimation and other product issues, optimizing the team's ability to deliver value incrementally.

Full-stack Engineer - Full time - Remote   **Aug 2021 - Aug 2023**
Azul Nigeria   **Lagos State, Nigeria**

- Worked on setting up Eloquent models to define and refine the structure of the Laravel application's backend data.

- Integrated and utilized background processing tools to manage asynchronous tasks, such as sending emails and processing background jobs, improving application responsiveness.

- Designed and implemented RESTful APIs using Laravel and PHP to facilitate seamless data exchange between the frontend and backend systems.

- Optimized database queries, managed migration and implemented indexing using the Facade library and MySQL to enhance the performance and scalability of the application.

- Implemented user authentication and authorization using PHP and JWT (JSON Web Tokens) to secure the applications content management system and manage user roles.

- Conducted thorough compatibility testing across various devices and screen sizes, ensuring a fully mobile-optimized experience that met rigorous quality and usability standards.

- Spearheaded the implementation of advanced front-end features using TypeScript, Next.js, React.js, and Tailwind CSS, focusing on optimizing user experience, engagement, and performance across diverse platforms.

Software Engineer - Internship - Hybrid   **June 2021 - July 2021**
Asset and Resource Management Holding Company (ARM)   **Lagos State, Nigeria**

- Leveraged Git version control and GitHub to streamline the entire Software Development Life Cycle, ensuring efficient tracking, versioning, and collaboration across all stages of application development.

- Reduced page styling time by 40%, by utilizing Tailwind CSS in the styling of components and major pages across the lifestyle web-application being worked on.

- Spearheaded the design and development of multiple web pages while adhering to the user interface specifications and brand guidelines.

- Collaborated with cross-functional teams and subject matter experts to ensure the core functionality of web applications aligned with product strategy, company goals, and business objectives.

- Optimized page load times by 50% through the implementation of Webpack and module bundling strategies, significantly reducing JavaScript file size and improving overall page speed.

Software Engineer - Internship - Hybrid   **March 2021 - May 2021**
Azul Nigeria   **Lagos State, Nigeria**

- Participated in the development of a mobile-optimized experience, working on frontend tasks and ensuring compatibility with various devices and screen sizes using Syntactically Awesome Style Sheets (SASS).

- Assisted in backend development tasks for the application using Django, including working on models, views, serializers, and APIs under the guidance of senior developers.

- Supported the integration of Celery for handling asynchronous and periodic tasks, gaining exposure to backend infrastructure and performance optimization.

PERSONAL & ACADEMIC PROJECTS

- **Adaptive Personalized E-commerce Recommender System:** A full-stack e-commerce web application built with Django

rest framework and React Javascript, featuring a content based recommendation system. The recommendation system uses product information to recommend similar products to a user. [View Writeup](#)

    -> **Link**: [Github URL](#)

    -> **Tools**: React.js | Django.js | PostgreSQL | JavaScript | SCSS | Pickle | Scikit-Learn | Pandas | Numpy

- **Chestnut school management system:** A futuristic school (student, staff, results, promotion) management system deployed on AWS and built to support over 100,000 students and faculty across various classes.
  - -> **Link**: https://chestnutschool.com/
  - -> **Tools**: Next.js | React Query | React.js | Tailwind CSS | Zustand | Vercel | Node.js | Express.js | Docker | Git
- **Breast Cancer Risk and Susceptibility Prediction using Machine Learning:** An undergraduate research project conducted that utilized open source data from Kaggle to analyze and classification models to predict breast cancer susceptibility.
  - -> **Link**: [View Writeup](#)
  - -> **Tools**: Scikit-Learn | Pandas | Numpy | Jupyter

SKILLS

Languages:

- PHP, SQL, Typescript, JavaScript, C#, Python, Bash, Go

Tools:

- **Continuous Integration/Continuous Deployment:** AWS CodePipeline, AWS CodeBuild, AWS CodeDeploy, Octopus Deploy, Teamcity, GitHub Actions
- **Infrastructure:** Cloud Formation, Terraform, Docker, Docker Compose, Kubernetes
- **Databases:** MySQL, PostgreSQL, Redis, MongoDB, AWS Redshift, AWS Aurora, AWS DynamoDB, AWS OpenSearch
- **User Interface Design:** Figma, Adobe XD
- **Version control:** Git, Stash, BitBucket
- **Vector Embeddings:** PyVector, ChromaDB, Pinecone
- **Others:** Wordpress, Kibana, Metabase, Postman, ReSharper, Elastic Search

Techniques:

- **Microservices**, **Database Design**, **Unit Testing, Serverless**, User Interface Design, Scripting

Frameworks:

- **Web Applications:** Selenium, Selenium Grid, Django Rest Framework, SASS, Django, ASP.NET MVC, ASP.NET Core, XUnit, React.js, Node.js, Next.js
- **Machine Learning:** Matplotlib, NLTK, Cosine Similarity, TF-IDF Vectorizer, Pickle, Ollama, LangChain, LangGraph, LlamaParse, LlamaIndex, Tensorflow, Pytorch, Keras, MXNet

CERTIFICATIONS

- **CompTIA Security+** - (May 2025 - May 2028)
- **AWS Certified Machine Learning - Specialty** - (March 2025 - March 2028)
- **LangGraph- Develop LLM powered AI agents with LangGraph** - (Feb 2025)
- Foundational C# with Microsoft - (October 2023)
- **Certified in Cyber Security (ISC2)** - (March 2024)
- Home Health - Axxess - (March 2024)
- Home Care - Axxess - (March 2024)
- Hospice Clinical - Axxess - (March 2024)
- Palliative Care - Axxess - (January 2024)
- React - Hackerrank - (February 2023)
- Javascript - Hackerrank - (July 2022)
- CSS - Hackerrank - (October 2021)
- Certified Secure Computer User (CSCU) - EC-Council University - (July 2021)
  Credential ID ECC3295401867
- Python - Hackerrank - (May 2021)

ARTICLES

- **Content-Based filtering recommendation system using Django, Scikit-learn and Django Rest Framework:** An article covering how to implement a full-stack scalable recommendation system in an e-commerce environment using Django and Django Rest Framework
  - -> **Date Posted:** April 30th 2024
  - -> **Link**: https://www.linkedin.com/pulse/content-based-filtering-recommendation-system-using-django-akasukpe-pzpcf
  - -> **Tools**: Django | Django Rest Framework | Pickle | Scikit-Learn | Pandas | Numpy
- **Role-Based Access-Control using Next.js Middlewares:** An article covering a cleaner way to handle user authentication and authorization using the Next.js Framework.
  - -> **Date Posted:** May 5th 2024
  - -> **Link**: https://www.linkedin.com/pulse/role-based-access-control-using-nextjs-middlewares-akasukpe-kkt1f
  - -> **Tools**: Next.js | React.js | TypeScript | Tailwind CSS | Npm | Git

HONORS & AWARDS

Dean's Graduate Scholarship January 2025

Issued by School Of Graduate and Postdoctoral Studies - Ontario Tech University

-> These are awarded to high-achieving full-time students entering a research-based master's or doctoral program with an average of A-minus (3.70/4.30) or greater.

Engineer (Dr.) Akin Alade (PhD Networking and Telecommunications) Family's Award July 2023

Issued by Engineer (Dr.) Akin Alade

-> Best graduating student in the department of Computer Science. Awarded a prize of ₦25,000($32.07) Exchange Rate[$1=₦779.55].

Folajimi Daodu's Award July 2023

Issued by Folajimi Daodu Foundation

-> Best graduating student in the department of Computer Science. Awarded a prize of ₦50,000($64.14) Exchange Rate[$1=₦779.55].

Labulo Prize: Prof Boidun and Prof (MRS.) Elizabeth Disu July 2023

Issued by Prof Boidun and Prof (MRS.) Elizabeth Disu

-> Best graduating student in the department of Computer Science. Awarded a prize of ₦100,000($128.14) Exchange Rate[$1=₦779.55].

Late Chief Oluwafunminiyi Olatunde Ajao Prize July 2023

Issued by Babcock University

-> Best graduating student in the department of Computer Science. Awarded a prize of ₦50,000($64.14) Exchange Rate[$1=₦779.55].

Mouka Award For Excellence July 2023

Issued by Mouka Foam

-> For the best graduating student in the School of Computing and Engineering Sciences. Awarded a prize of ₦100,000($128.14) Exchange Rate[$1=₦779.55].

New Horizon International IT/E-BIZ Certification Excellence Price July 2023

Issued by New Horizon

-> Presented for academic excellence. Awarded a tablet.

Oluwajulo Majekodunmi Foundation: Late Mr Surajudeen Ojediran Merit Award July 2023

Issued by Oluwajulo Majekodunmi Foundation

-> Best graduating student in the department of Computer Science. Awarded a prize of ₦100,000($128.14) Exchange Rate[$1=₦779.55].

School Dean's Award July 2023

Issued by Babcock University

-> Best graduating student in the school of Computing and Engineering Sciences.

Highest CGPA in 400L May 2023

Issued by Babcock University Computer Club

-> Student with the highest Cumulative Grade Point Average (CGPA) in 400L in the Department of Computer Science.

Cavista Hackathon winner   **March 2023**

Issued by Cavista Technologies

 -> Collaborated with a team of three(3) developers and one(1) designer to build a software solution in a 24 hour coding
    marathon. Won a grand prize of ₦1,000,000($1,282.79) Exchange Rate[$1=₦779.55].

Highest CGPA in 300L   **March 2022**

Issued by Babcock University Computer Club

 -> Student with the highest Cumulative Grade Point Average (CGPA) in 300L in the School of Computing and Engineering
    Sciences.

Highest CGPA in 200L   **March 2021**

Issued by Babcock University Computer Club

 -> Student with the highest Cumulative Grade Point Average (CGPA) in 200L in the School of Computing and Engineering
    Sciences.

VOLUNTEERING

Software Developer   **Apr 2022 - June 2023**

Babcock University Computer Club   Babcock University

- Mentored fellow students in coding and problem-solving skills, fostering a collaborative learning environment.
- Created and maintained documentation for coding projects, ensuring knowledge transfer and future reference.

Co-Lead Blockchain Community   **Nov 2022 - June 2023**

Google Developer Student Clubs   Babcock University

- Mentored students interested in blockchain development, providing guidance on blockchain platforms, consensus
  algorithms, and distributed ledger technologies.
- Encouraged members to explore emerging trends and advancements in blockchain technology.

Student Tutor   **June 2022 - June 2023**

The Catalyst Tutorial   Babcock University

- Instructed students in programming courses, providing guidance on coding languages, algorithms, and problem-solving
  techniques.
- Offered constructive feedback on assignments and assessments, guiding students in areas of improvement.