Ebuka Johnbosco Okpala
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Education

Clemson University, Clemson, SC
Ph.D. in Computer Science — August 2020 – May 2024 (Expected)

- Research interests: Applied Machine Learning, Deep Learning, and Natural Language Processing. Current research focuses on detecting and analyzing of online abuse using LLMs and understanding and mitigation bias in online abuse detection models based on LLMs

M.S. in Computer Science: GPA: 3.75 — August 2018 – May 2020

- Relevant coursework: Design and Analysis of Algorithms, Deep Learning, Hand on Machine Learning, Advanced Machine Learning, Database Management Systems, Software Architecture, and Advanced Computer Security

Kwame Nkrumah University of Science and Technology, Kumasi, Ghana
B.Sc. Computer Engineering: Second Class (Upper division) — August 2011 – June 2015

Technical Skills

Programming Languages: Python, C/C++, Java, Swift, and SQL
Machine Learning Libraries: PyTorch, TensorFlow, Keras, Trax, Scikit-learn, Numpy, and Pandas
Web Development: JavaScript, PHP, jQuery, Node.js, MySQL, HTML5 and CSS
Big data: Splunk and Apache Superset

Experience

Clemson Online - Clemson University — Clemson, SC
Digital Tech Coordinator — August 2019 – Present

- Created SQL queries to extract knowledge from Clemson University's learning technologies databases
- Developed data analytics dashboards using Splunk and its Search Processing Language to provide insights to the University leadership to make strategic decisions on maintenance, acquisition, and transition of learning technology systems and tools, enabling the University to run efficiently, cut costs, and reallocate needed resources
- Worked across teams to develop and maintain the Clemson Online website

Apple Inc — Seattle, WA
AI/ML Software Engineering Intern — May 2023 – August 2023

- Developed a new end-to-end Siri in the home feature that enables users to change the state of the devices in their home within a specified duration with the ability to revert to its initial state

Apple Inc — Seattle, WA
AI/ML Software Engineering Intern — May 2022 – August 2022

- Built the integration and tooling to drive quality in performance ahead of seeding and production. Developed analytics dashboards that provide insights from the measured performance and latency metrics

Apple Inc — Seattle, WA
AI/ML Software Engineering Intern — May 2021 – August 2021

- Developed a new end-to-end Siri in the home feature that enable users discover the automations in their home

Eresea Foods Inc — Abuja, Nigeria
Web Software Developer — January 2017 – June 2018

- Designed and developed the Eresea Foods' website from start to production and managed the website after production

Andela — Remote
Web Application Developer Trainee — October 2017 – May 2018

- Developed a progressive news feed headlines web application
- Developed RESTFUL APIs for a web-based student information system using Node.js, AngularJs and MonogoDB

Publications

- **Anaysis of Covid-19 Offensive Tweets and Their Targets.** Song Liao, Ebuka Okpala, Long Cheng, Nishant Vishwamitra, Mingqi Li, Hongxin Hu, Feng Luo, Matthew Costello. ACM SIGKDD Conference on Knowledge Discovery and Data Mining, 2023.
- **AI-Cybersecurity Education Through Designing AI-based Cyberharassment Detection Lab.** Ebuka Okpala, Nishant Vishwamitra, Keyan Guo, Song Liao, Long Cheng, Hongxin Hu, Yongkai Wu, Xiaohong Yuan, Jeannette Wade, Sajad Khorsandroo. IEEE Frontiers in Education Conference (FIE), 2023.
- **AAEBERT: Debiasing BERT-based Hate Speech Detection Models via Adversarial Learning.** Ebuka Okpala, Long Cheng, Nicodemus Mbwambo, Feng Luo. International Conference on Machine Learning and Applications (ICLMA), 2022.
- **COVID-HateBERT: a Pre-trained Language Model for COVID-19 related Hate Speech Detection**. Mingqi Li, Song Liao, Ebuka Okpala, Tong M, Matthew Costello, Long Cheng, Hongxin Hu, Feng Luo. International Conference on Machine Learning and Applications (ICMLA), 2021.
- **COVID-19: A Pandemic of Anti-Asian Cyberhate**. Matthew Costello, Long Cheng, Feng Luo, Hongxin Hu, Song Liao, Nishant Vishwamitra, Mingqi Li, Ebuka Okpala. Journal of Hate Studies (JHS), 2021.
- **Understanding and Mitigating Biases in BERT-based Hate Speech Detection Models.** Ebuka Okpala, Long Cheng, Nicodemus Mbwambo, Feng Luo, Hongxin Hu, Matthew Costello. (In revision)
- **Anayzing Offensive Content and Topics in BLM-Related Tweets.** Ebuka Okpala, Long Cheng. (In revision)
- **Enhancing AI-Cybersecurity Education Through Designing AI/ML-based Cyberharassment Detection Labs.** Nishant Vishwamitra, Ebuka Okpala, Keyan Guo, Song Liao, Long Cheng, Hongxin Hu, Yongkai Wu, Xiaohong Yuan, Jeannette Wade, Sajad Khorsandroo. (In revision)

Posters

- **AAEBERT: Debiasing BERT-based Hate Speech Detection Models via Adversarial Learning.** Ebuka Okpala, Long Cheng. IEEE Secure Development Conference (SecDev), 2022.
- **BranchCorr: Detecting Incompatible Branch Behavior by Enforcing Branch Correlation Integrity**. Long Cheng, Ebuka Okpala, Song Liao, Danfeng(Daphne) Yao. IEEE Secure Development Conference (SecDev), 2019.

Service

Reviewer for Conference

- International Conference on Distributed Computing Systems (ICDCS), 2023
- International Conference on Computer Communications and Networks (ICCCN), 2023
- Annual Computer Security Applications Conference (ACSC), 2022
- IEEE International Performance Computing and Communication Conference (IPCCC), 2021

Projects

Learning Platform and Education Curriculum for AI-Driven Socially Relevant Cybersecurity June 2022 - Present

- Designed and implemented the hyperparameter tuning, adversarial attacks, and debiasing word embeddings labs and instructional materials in the EAGER SaTC lab project. The hands-on labs engage students in AI-driven, socially relevant cybersecurity.
- Designed, developed, and maintains the EAGER SaTC website