Ali Eric Chinonso

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RESEARCH INTERESTS

Information Security
Human-Centred Computing
NLP for Security
Privacy-Preserving Systems
AI/ML Applications
Data Mining/Visualization

EDUCATIONAL BACKGROUND

Huazhong University of Science and Technology

2023-09 to 2025-09

School of Cyberscience and Engineering | Cybersecurity | Master GPA:4.0 (Rank:前1%)

Thesis Ransomware Detection via Hybrid CNN-BiLSTM Model & Behavioral Feature Analysis

Advisor : Professor Songfeng Lu

- *Applied knowledge from Big Data Analytics and Machine Learning to process a dataset of 30,000+ ransomware samples and engineer a hybrid CNN-BiLSTM model for detection.*
- *Leveraged concepts from Advanced Network Security to analyze behavioral features of API calls, DLLs, and map artefacts to the MITER ATT&CK framework.*
- *The research culminated in a decentralized, privacy-enhancing framework that demonstrated practical application of advanced AI for cybersecurity.*

Michael Okpara University of Agriculture, Umudike, Nigeria

2013-09 to 2019-08

School of Engineering and Engineering Technology | Computer Engineering | Bachelor GPA:3.92

Thesis Design and Implementation of a GSM-Based Microcontroller Home Automation System for Centralized Remote Control of Lighting and Appliances

Advisor: Dr. Ede Cyril

- *Designed and implemented a human-centered system using an ATmega328 microcontroller and GSM technology for remote environmental control*
- *Created a functional prototype through circuit simulation and hardware integration, demonstrating end-to-end secure data transmission capabilities*
- Addressed real-world human accessibility needs by providing assistive technology for physically challenged users

RESEARCH EXPERIENCE & PROJECTS

Wuhan JinyinHu Lab_HUST

Msc Researcher 2023-09 to 2025-06

Wuhan JinyinHu Laboratory_HUST 2023-09 - 2025-06

Msc Researcher

- Built a scalable system for dynamic malware analysis, constructing a novel dataset of 30,173 ransomware samples by instrumenting and tracing API calls, DLL interactions, and mutex operations, mapping them to MITRE ATT&CK TTPs for improved and context-aware detection. .
- Engineered a Python-based framework for decentralized analysis, integrating feature extraction, CNN-BiLSTM model training, and federated learning orchestration with Flower, achieving 99.9% detection accuracy.
- Co-authored a security architecture integrating a Zero Trust SDP with a machine learning-enabled Snort IDS/IPS, focusing on real-time detection and mitigation of cross-platform backdoor attacks.

- **IPNX BoM Automation App_IPNX Nigeria Ltd.** 2019 -11 - 2021-10

4, Balarabe Musa Crescent,Victoria Island, Lagos, Nigeria
NYSC Project Intern

- Designed and implemented a full-stack automation system for the company’ s Bill of Materials (BoM) process using React.js, PHP, and Python/Tkinter.
- Built data input and validation modules that reduced manual documentation time by over 60% and integrated the backend with internal inventory APIs for real-time cost estimation and approval workflows.

FIIRO Information Systems 206 Project. 2019 -02 - 2019-07
Federal Institute of Industrial Research, Oshodi,3 FIIRO Road, Off Agege Motor Road, Oshodi, Lagos, Nigeria.
Research Intern -Information Systems & NLP

- Assisted in a pilot project on automated document classification and keyword extraction from agricultural research reports using basic TF-IDF and Naïve Bayes models in Python.
- Participated in data cleaning and formatting of multilingual textual datasets for early-stage search and retrieval experiments.
- Gained foundational exposure to natural language processing, information retrieval systems, and research data indexing workflows in a real-world R&D environment.

TEACHING EXPERIENCE

Huazhong University of Science and Technology _HUST 2024-07 – 2025-06
Graduate Teaching Assistant

- Supervised and mentored 13 international first-year students in Computer Science laboratory courses, grading assessments, and ensuring a smooth transition to university-level research.
- Prepared comprehensive lab manuals and graded weekly assessments, improving students average lab performance by 15% over the semester.
- Supported the development of hands-on experiments linking theoretical knowledge to real-world applications.

Royal Academy Schools 2013-11 - 2015-04
STEM Instructor -Summer Program

- Taught Physics and Introductory Computer Science to over 200 SSCE students, achieving a record of 42% improvement in external WAEC performance.
- Redesigned and updated the Introduction to Computer Science curriculum, enhancing clarity and self-study effectiveness.
- Fostered early student interest in computational thinking through problem-based learning and real-world examples, cultivating future STEM talent.

PUBLICATIONS

Chinonso E.A., Lu, S., Ruambo, F., & Tchamini, F. (2025). RS-FEDRAD: Robust and Scalable Federated Ransomware Detection Using TTP-Enhanced Dataset. International Journal of Information Systems Engineering and Management. https://doi.org/10.52783/jisem.v10i43s.8490

Chinonso E.A., Lu, S., Ruambo, F., & Tchamini, F. (2025). Federated Learning in Ransomware Detection: A Systematic Literature Review. International Journal of Science, Engineering and Technology. (Accepted)

Ruambo, F.A., Masanga, E.E., **Chinonso E.A**., & Nicholaus, M.R. (2024). Enhanced Backdoor Resilience in Cross-Platform Systems Using Zero Trust SDP-Enabled SnortML IDS/IPS. In Cybersecurity and Secure Information Systems (pp. 459–478). Taylor & Francis. https://doi.org/10.1201/9781003614197-29

Ahmed, N., Roomi, A., **Chinonso E.A**., Fiaz, S.J., & Yasin, A. (2024). International Cyber Law and National Security: Balancing Privacy, Security, and Sovereignty. Policy Research Journal. https://doi.org/10.5281/zenodo.15063015

AWARDS & CERTIFICATIONS

Parallel Programming Hands-on Workshop | 2025 Awarded in2025-07

HUST-USYD Summer School 2025

HUST – Outstanding International Student Award | 2025 Awarded in2025-07

International Students Office

Advanced Cybersecurity Bootcamp, Cyber Talents Academy | 2024 Awarded in2024-11

Cyber Talents

Chinese Government Scholarship (Fully Funded Master's) | 2023 Awarded in2023-09

CSC Scholarship

Natural Language Specialization Awarded in2023-06

Coursera : in partnership with Stanford University

LANGUAGES

English: Native Language, Distinguished levels in Listening, Speaking, Reading, and Writing.
Chinese Mandarin: Intermediate levels in Listening, Speaking, Reading, and Writing.

TECHNICAL SKILLS

Programming & Systems: C, C++, Python, PHP, JavaScript (React)

Security Tools & Platforms: IDA Pro/Ghidra (Familiar), Wireshark, Snort, Suricata, Docker, Git

Security Techniques: Binary Analysis, Threat Modeling, Zero Trust Architecture, Network Traffic Analysis

ML/Data: PyTorch, Scikit-learn, CNN/LSTM/BiLSTM, Data Preprocessing

REFERENCES

Songfeng Lu, Professor
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Relationship: MSc. Supervisor

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