Priscilla Kyei Danso

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About Me

My research interests lie at the intersection of compliance automation and cybersecurity. I am currently developing ComplianceGPT, a hybrid system that uses advanced language models and formal logic to automate regulatory compliance. By translating complex regulations into a logical language, ComplianceGPT provides a more efficient and accurate approach to ensuring adherence to industry standards. Building on my experience with IoT security, where I employed machine learning techniques for device profiling and anomaly detection, I aim to extend these methodologies to the broader realm of compliance automation. I am committed to contributing to a safer and more resilient digital landscape by advancing the state-of-the-art in compliance automation, formal verification, and cybersecurity.

Education

Sept. 2023 ∼ Present	Stony Brook University, New York, USA GPA: 3.4/4.0	Ph.D. in Computer Science Advisor: Omar Chowdhury
May 2021 ∼ May 2023	University of New Brunswick, Canada GPA: 3.9/4.0 Thesis: Transferability of Machine Learning Model for IoT Device Identification and Vulnerability Assessment PDF	Master of Computer Science (MCS) Advisor: Ali A. Ghorbani
Sept. 2012 ∼ Jun. 2016	Kwame Nkrumah University of Science and Technology, Kumasi, Ghana Project: An Integrated Messaging Platform for an Enterprise Environment	B.S. in Computer Engineering

Research Experience

Aug. 2023 ∼ Present	Research Assistant @ Stony Brook University, New York, USA Conducting research on compliance automation, formal logic, and cybersecurity. Developing ComplianceGPT.
May 2021 ∼ Dec. 2022	Research Assistant @ Canadian Institute for Cybersecurity, Fredericton, New Brunswick, Canada Engineered a system for IoT device profiling and vulnerability assessment using machine learning. Published research on IoT security. [5, 4, 3, 2, 1]

Publication

[5] **P. K. Danso**, et al., "Transferability of Machine Learning Algorithm for IoT Device Profiling and Identification". IEEE Internet of Things Journal, 2023, PDF

[4] **P. K. Danso**, et al., "Ensemble-based intrusion detection for internet of things devices". IEEE HONET Conference, 2022. PDF

[3] **P. K. Danso**, et al., "Human-Centric machine learning: The role of users in the development of IoT device identification and vulnerability assessment". HCI for Cybersecurity, Privacy and Trust, 2023. PDF

[2] S. Dadkhah, H. Mahdikhani, **P. K. Danso**, et al., "Towards the development of a realistic multidimensional IoT profiling dataset". IEEE PST Conference, 2022. PDF

[1] A. Zohourian, S. Dadkhah, E. C. P. Neto, H. Mahdikhani, **P. K. Danso**, et al., "IoT Zigbee Device Security: A comprehensive review". Elsevier Internet of Things Journal, 2023. PDF

Skills & Tools

`Python` and **`OCaml`** are my most frequently used languages. I also have experience in **`PHP`** and **`Javascript`**. Machine learning: **`scikit-learn`**. Data Analysis: **`Pandas`**, **`Numpy`**, **`Plotly`**, and **`Seaborn`**. **`Wireshark`**, **`Snort`**, and **`Nmap`** are the cybsecurity tools I am familiar with. Symbolic Model Checker: **`NuSMV`**. Database: **`MySQL`** and **`PostgreSQL`**.

Selected Awards and Honors

Thirteenth Summer School on Formal Techniques + FMiTF Bootcamp	Sponsored by NSF, May 2024
CPS-IOT Week 2024 in Hong Kong	NSF Student Travel Grant, April 2024
iMentor scholarship for ACM CCS conference in Copenhagen, Denmark	Sponsored by NSF, November 2023
Academic Scholarship, University of New Brunswick	May 2021, Canadian Institute for Cybersecurity

Academic Services

`Reviewer` of the IEEE Internet of Things Journal 2022
`Artifact Evaluation Committee` of USENIX Security 2025 and ACM CCS 2024

Conference Presentations

`Oral Presentation:` Ensemble-based intrusion detection for internet of things devices, IEEE HONET Conference, December 2022.

`Poster Presentation:` Ensemble-based intrusion detection for internet of things devices, IEEE PST Conference, August 2022.

Teaching Experience

Jan. 2024 ∼ Apr. 2024	Teaching Assistant @ Stony Brook University Course: ISE331 Fundamentals of Computer Security
Aug. 2023 ∼ Dec. 2023	Teaching Assistant @ Stony Brook University Course: CSE331 Computer Security Fundamentals

Work Experience

Nov. 2020 ∼ Apr. 2021	Data Analyst @ United Nations World Food Programme. Accra, Ghana. Developed a Fleet Management System for pharmaceutical companies across West Africa using Microsoft Access. Trained staff on system usage.
Jul. 2020 ∼ Mar. 2021	Web Developer Consultant @ Cobalt Partners. Accra, Ghana. Built an enterprise portal supporting 1599 children across 89 classrooms daily using Laravel, VueJS, HTML, CSS, and MySQL. Analyzed educational datasets using Google BigQuery and PowerBI.
Aug. 2019 ∼ Jun. 2020	Data Scientist @ Mesika Ghana. Accra, Ghana. Analyzed transaction data for over 1 million customers using Pandas, Scikit-learn, and Plotly. Implemented an ETL pipeline using Apache Flow and PostgreSQL. Built a visualization dashboard using HTML, JavaScript, and CSS.
Apr. 2019 ∼ Jul. 2019	Intern @ Ernst and Young Ghana. Accra, Ghana. Analyzed and visualized ministerial data using Power BI and MS Excel. Conducted end-to-end testing of applications and drafted proposals.
Jan. 2018 ∼ Mar. 2019	Software Developer @ SuperTech. Accra, Ghana. Developed a document management system using SharePoint. Designed custom reports in Microsoft Dynamics ERP. Provided technical support and customer service.
Jun. 2016 ∼ Dec. 2017	Assistant Programmer @ IT Consortium. Accra, Ghana. Managed projects and provided technical support for the Ghana online passport application. Tracked and resolved tickets using a project management system.