

Gabriel Owusu

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I. EDUCATIONAL BACKGROUND

The University of Texas Rio Grande Valley

Ph.D. Management Information Systems

Expected: May 2026

GPA: 4.0

Kwame Nkrumah University of Science and Technology | Kumasi, Ghana

June 2019

Bachelor of Science in Computer Science

GPA: 3.25

II. RESEARCH

Dissertation Title: Essays on AI-Driven Analytics for Enhanced Healthcare Delivery: From Onset to Outcomes in Neurological Diseases Management

Chair: Dr. Xuan Wang, Proposal Defended on May 12, 2025

Summary: This three-essay dissertation investigates innovative AI-driven analytics frameworks for enhancing healthcare delivery in the management of Alzheimer's disease (AD) and related dementias (ADRDs). The first essay proposes a graph neural network-based clinical decision support system (CDSS) for early AD detection, evaluating its effectiveness in improving preventive care and clinical engagement. The second essay introduces the MADT-RNN model, a novel attention-driven deep learning approach for personalized AD diagnostics and progression tracking, demonstrating superior predictive accuracy using longitudinal neuroimaging data. The third essay explores the use of fine-tuned large language models (LLMs) to augment caregiver support, focusing on delivering contextually relevant, compassionate and empathetic information to alleviate caregiver burden. Collectively, these essays contribute to the development of patient-centered IT artifacts aimed at improving early detection, personalized diagnosis, and caregiver support in chronic neurological disease management using computational design science approach.

RESEARCH INTEREST

- Healthcare Analytics.
- Corporate Sustainability and AI-driven business Analytics.
- Social Media Analytics and Challenges for health.
- Deep Learning and Machine Learning with Time Series Data (Methodology).

JOURNAL PUBLICATIONS

- **Owusu, G.** and Moqbel, M. (2025). Beyond Scrolling: Social Media's Impact on Creativity. **Journal of Computer Information Systems**. <https://doi.org/10.1080/08874417.2025.2537134>

MANUSCRIPTS UNDER REVIEW

- **Owusu, G.**, Wang, X., Sun, G., Bao, C. "Pioneering Explainable Alzheimer's Disease Detection Using Longitudinal Neuroimaging Data: A Multi-level Attention-based Deep Transfer Recurrent Neural Network Approach". **Under review at MISQ Quarterly**.
- Hong, Q., Meah, R. M., **Owusu, G.**, Wang, B. "From Social Signals to Willingness to Engage with Generative AI: A Dual Method of X Analytics and SEM Approach". **Under review at Information Systems Journal**.

REFEERED CONFERENCE PROCEEDINGS PUBLICATIONS

- Aryee S., **Owusu G.**, Wang X., Moqbel M. (2025) "Revolutionizing Healthcare: Data Integration on Hospital Care Efficiency" *Proceedings of the 30th Americas Conference on Information Systems (AMCIS 2025)*.
- **Owusu G.**, Andoh-Baidoo K. F., Ayaburi W. E. (2025) "Understanding supporters' response to online petitions: A value system moderated perspective" *Proceedings of the 58th Hawaii International Conference on System Sciences (HICSS 2025)*.
- **Owusu, G.**, Liao Q., Frimpong, B. (2024) "Towards a Privacy-Preserving Healthcare Analytics for Neurological Diseases Management" *Proceedings of the 30th Americas Conference on Information Systems (AMCIS 2024)*. Salt Lake City, Utah.

- Abraham, T., **Owusu, G.**, Wang, X. (2024) "Chief Sustainability Officer's Role Centrality and Corporate Sustainability Performance." *Proceedings of the 84th Annual Meeting Academy of Management (AOM 2024 - Best Paper)*.
- **Owusu, G.**, Wang, X., Sun, J., (2024) "Longitudinal healthcare analytics for early detection and progression of neurological diseases; A clinical decision support system." *Proceedings of the 57th Hawaii International Conference on System Sciences (HICSS 2024)*.
- **Owusu, Gabriel** and Xiao, Nan. (2023) "How does Technological Entitlement Affect Cyberdeviance? The Role of Organizational Justice." *Proceedings of the 29th Americas Conference on Information Systems (AMCIS 2023) August 2023. Panama City*.
- Bonke, C., Sun, J., **Owusu, G.**, Wang, Y. (2023) "Household Digital Twin for Disaster Response." *Proceedings of the 29th Americas Conference on Information Systems (AMCIS 2023) August 2023. Panama City, Panama*.

IN PROGRESS AND WORKING PAPERS

- **Owusu, G.**, Wang, X., Sun, G., Chenzhang, B and Andoh-Baidoo, F "Towards Designing a Patient-Centered Framework for Early Neurological Disease Prevention Awareness: Insights from Alzheimer's Disease". (Final stage for submission to **Decision Support Systems**).
- **Owusu, G.**, Wang, X., Sun, G., Chenzhang, B and Andoh-Baidoo, F "Augmenting Caregiver Support for ADRDs: A Computational Design Science Approach Using Fine-Tuned LLMs". (In Preparation to submit to **Information Systems Research** special issue on [Compassionate AI](#)).
- Aryee S., **Owusu, G.**, Wang, X., & Sun, G. "Revolutionizing Healthcare: Data Integration on Hospital Care Efficiency". (Final stage for submission to **International Journal of Information Management**).
- **Owusu, G.**, Aryee S., Wang, X., & Sun, G. "Clinicians' adoption of clinical decision support system: A mixed methods approach" (Final stage for submission to **Decision Support Systems**).
- Frimpong, B., **Owusu, G.**, & Mohammed, F. "Relational legitimacy and Crowdfunding context". (Final stage for submission **Information Systems Journal**).
- Frimpong, B., **Owusu, G.**, Mohammed, F., & Manga, J. "Crowdfunding and Rhetoric signals and NGO and Donation context". (In preparation stage for submission to **Journal of Association of Information Systems**).
- **Owusu, G.**, Andoh-Baidoo, F., & Ayaburi, E. "Understanding supporters' response to online petitions: A value system moderated perspective". (Target Journal: **Information and Organization**).
- Abraham, T., **Owusu, G.**, & Wang, X. "Corporate Sustainability Performance: The Fourfold Centrality of the Chief Sustainability Officer". (In preparation for submission to **Business Horizons**).
- **Owusu, G.**, Meah, R. M., Fadare, K., & Wang B. "Social media as a platform for sustainability disclosures: Implications for Corporate Reputation". (In preparation, Target Journal: **International Journal of Information Management**).
- **Paper development workshops** - MISQ Virtual Author Development Workshop Evaluation - Summer 2024

CONFERENCE PRESENTATIONS

- **Owusu, G.**, Wang, X., Sun, G., Alvaregan, L. J. (2025) "Towards Designing a Patient-Centered Framework for Early Neurological Disease Prevention Awareness: Insights from Alzheimer's Disease." **To be presented at the 56th Decision Sciences Institute (DSI) annual conference (November 2025)**.
- Wang, X., **Owusu, G.**, Zhao, X. (2025) "Developing an AI-Based Visual Decision Support System: A Patient-Centered Perspective for Early Neurological Disease Detection and Prevention – Insights from Alzheimer's Disease and Related Dementia." **Presented at AIM-AHEAD annual meeting – July 2025**.
- **Owusu, G.**, Wang, X., Sun, G., Chenzhang, B. (2025) "MADT-RNN: Pioneering Personalized Alzheimer's Detection with Attention-Driven Deep Learning" **Presented at CHITA Conference – UT Austin – April 2025**.
- **Owusu, G.**, Wang, X., Sun, G., Chenzhang, B. (2025) "From Onset to Outcomes: Guiding Neurological Disease Care with AI-Powered Precision" **Presented at Biz AI Conference: AI Applications in Business Research – UT Dallas – March 2025**.

- **Owusu, G.**, Sun, J., Bonke, C. (2023) “Power Outage Management with a Chatbot.” *Presented at the 29th Americas Conference on Information Systems (AMCIS 2023), TREO - August 2023. Panama City, Panama.*
- Clinicians’ adoption of clinical decision support system: A mixed methods approach - *Presented at SIPCE 2024 Third Annual Conference for Interdisciplinary Research.*
- Longitudinal healthcare analytics for neurological diseases management - *Presented at Florence Nightingale day, School of Mathematical and Statistical Sciences – UTRGV (Best Poster Presentation Award).*

III. TEACHING

- **INFS 2300** – Data Modelling Management Tools - In progress Spring 2025
 - Hybrid format: Class size- 37 students
 - Introduced students to business analytics tools (MS Excel, R, and PowerBI)
 - Teaching evaluation score of ***4.62/5**
- **QUMT 4343** – Prescriptive Analytics - In progress Fall 2025
- **QUMT 6370** - Big Data Analytics Co-Instructor Fall 2025
 - Developed this course with Dr. Xuan Wang – We designed the course for novice programmers who would like to understand the core platforms and tools to analyze big data.
 - Introduce students to cloud and AWS services including Hadoop, MapReduce, Hive, Pig and Spark to design and build big data applications to solve business problems with large volumes of data.

IV. AWARDS AND GRANTS

- NAIRR Pilot AI Unlocked Workshop Grant (\$5500) Spring 2025
- Robert C. Vackar COBE Ph.D. Student Research Grant Award (\$700) Spring 2025
- Doctoral Consortium at the Conference on Health IT and Analytics (CHITA) Spring 2025
- National Science Data Fabric Fellowship (\$2800) Fall 2024
- Robert C. Vackar COBE Ph.D. Student Research Grant Award (\$1000) Summer 2024
- PhD Student Excellence Award – RCVCOBE IS Department May 2024
- PhD Student Research Excellence Award – RCVCOBE April 2024
- Presidential Research Fellowship (\$20,000) August 2023-July 2025
- Best Poster Presentation Award – Florence Nightingale Day (\$200) February 2024
- Graduate student travel award Spring 2024
- Robert C. Vackar COBE Scholarship Award (\$150) April 2024
- Travel and Participation grant, Conference on Health IT and Analytics (CHITA) (\$3700) May 2023
- Robert C. Vackar COBE Ph.D. Student Research Grant Award (\$700) March 2023

V. PROFESSIONAL EXPERIENCE

- **Amazon.com** Seattle, Arizona
- **Data Engineering Intern – GR Tech Health** Summer 2025
 - Developed and deployed the OpenMetadata application as a robust data quality monitoring tool for the Global Realty organization (Technologies – CDK, RDS, EKS, ECR, EFS, OpenSearch, Docker).
 - Successfully migrated all DataNet ETL pipelines for the Shield Asset Management Team into a streamlined and maintainable AWS CDK package, improving infrastructure-as-code consistency and deployment efficiency.

Amazon.com

Phoenix, Arizona

Data Engineering Intern – AWS Health

Summer 2024

- Designing an automated framework to perform data quality checks on incoming data prior to data ingestion (Technologies – AWS glue, DynamoDB, Spark SQL, Scala, Python, GIT).
- Optimizing assigned Spark SQL queries for non-relational databases of the team to reduce latency of the existing stack, AWS for data modeling, data warehousing and building ETL pipelines.

Moja Group Inc.

Accra, Ghana

Data and Business Intelligence Analyst

July 2021 – August 2022

- Designed and implemented an advanced business intelligence model from ground up to report business requirements (KPIs) with Tableau, PowerBI, and Grafana dashboards for sales, finance, and marketing teams to make data-driven decisions.
- Partnered with the game development and marketing divisions to optimize model parameters, resulting in **98%** predictive accuracy, and contributing to a **15%** uplift in **Q4** gross game revenues.

AirtelTigo Ghana Limited

| Accra, Ghana

Business Intelligence Analyst

September 2019 – June 2021

- Championed the automation of subscriber inactivity and CVM for all campaigns, and this led to consistent improvement in net disconnections, increased daily active subscribers, and significantly improved our churn rate, reducing it by **20%**.
- Provided analytical support to Performance and planning team in providing insights and recommendations on a product to management which influenced business decision leading to a reduced disconnection by **53K** subscribers each month. This increased revenue by **2.5%** month on month.

VI. SERVICE

- Ad-hoc Reviewer** at Information Systems Frontiers (ISF) and ICT for Development (ICT4D) journals.
- Conference Session Chair** for “Moving beyond traditional constructs in Information systems Research, Emergent Research for Engaged Learning Track” – Americas Conference on Information Systems (AMCIS) 2023, Panama City.
- Ad-hoc Reviewer** at Annual Meeting of the Academy of Management (AOM), 2023; 2024.
- Ad-hoc Reviewer** at Hawaii International Conference on System Sciences (HICSS), 2023; 2024, 2025
- Ad-hoc Reviewer** at International Conference on Information Systems (ICIS), 2023; 2024, 2025.
- Ad-hoc Reviewer** at Americas Conference on Information Systems (AMCIS), 2023; 2024, 2025.
- Doctoral Student Conference Volunteer** – AMCIS 2023; AMCIS 2024.
- Student Mentor** – UTRGV Career Centre.
- Be My Eyes** – International Volunteer for Assisting Individuals with Sight Deficiency – August 2016 to present.

VII. PROFESSIONAL ASSOCIATIONS

- Member**, Association of Information Systems (AIS)
 - Member**, Special Interest Group on High Performance Computing (SIGHPC)
- August 2022 – Present

October 2024 – Present

VIII. TECHNICAL SKILLS

Data Analysis and Visualization Tools: Python, R, Advanced MS Excel, Power BI, Tableau, DAX, LIWC.

Programming Languages: Python, R, HTML5, CSS

Database Management: MSSQL, MYSQL, MariaDB, Oracle, Advanced MS Excel, MS Access.

ETL and Data Warehousing: Visual Studio, SSRS, SSIS, SSAS, SSDT, Linux Cent OS.