TOLUWANI C. OLUKANNI

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Education

Norwich University, Northfield, VT — May 2025
Bachelor of Science in Electrical and Computer Engineering
Minors: Mathematics and Computer Science — GPA 3.95
Relevant courses and topics: Embedded Systems, Circuit Design and Analysis, Electronics and Electrical Components, Programming for Microcontrollers, Signal Processing, Fundamentals of Digital Design

Relevant Experience

President, Norwich University Artificial Intelligence Club
Norwich University, Northfield, VT — September 2023 – Present

- Established the club and created its organizational framework, assigning committed officers to essential roles.
- Initiating and orchestrating a sequence of events, workshops, and seminars centered around Artificial Intelligence.
- Collaborating with club members to execute AI projects, fostering practical learning opportunities.
- Leading conversations on contemporary AI trends and their practical use, elevating members' understanding of AI's capabilities.

Research Apprentice, AY 23-24 Apprentice Grant
Undergraduate Research Program
Norwich University, Northfield, VT — August 2023 – Present

- Currently collaborating with a team to tackle the challenge of comprehending various pulses in time distributions by developing a central mathematical model.
- Enhanced the raw data processing program to improve event classification accuracy, reducing the misclassification rate for double pulses from 5% to less than 1%.
- Spearheading the mathematical modeling of time distribution shapes, with the goal of establishing a comprehensive model that consistently links various pulse regions.
- Actively participating in testing and fine-tuning algorithms and models, conducting extensive data collection and analysis to refine hypotheses and validate predictions.
- Playing a key role in experimental data collection across diverse operating conditions, encompassing varying light intensities and laser sources, including 405 nm and 535 nm, to support model testing and refinement.

Research Team Lead, Summer AI Research Fellows
Artificial Intelligence Center
Norwich University, Northfield, VT — May 2023 – August 2023

- Offered personalized mentorship and guidance, enabling team members to excel in their research projects and expand their AI expertise.
- Collaborated closely with esteemed professors, contributing to cutting-edge AI initiatives and projects.
- Attained invaluable insights into diverse AI applications and explored innovative approaches for optimizing medical diagnosis through advanced machine learning techniques.
- Published research papers on various machine learning applications, sharing knowledge and insights with the broader scientific community.
- Presented the Image Classification project at the Norwich Summer of Digital Transformation Colloquium, effectively communicating technical concepts to a diverse audience, including Norwich officials, faculty, and AI specialists.

Resident Advisor
Office of Residence Life and Civilian Housing, — August 2022 – Present
Norwich University, Northfield, VT

- Supervise and foster the development of relationships among 64 residents.
- Plan and implement programs to assist international and transfer students in transitioning to campus.
- Counsel and advise first year students on academic and personal questions and concerns.
- Develop and conduct programs on diversity, personal development, relationships, and academic performance.
- Manage administrative duties: Enforce University policies, maintenance requests, incident reports, and room transfers.

Technical Skills

- Designed circuits and prototypes using SolidWorks, TinkerCAD, NI Multisim, LTspice, Arduino IDE, Intel Quartus, and Code Composer Studio.
- Conducted circuit analysis, specializing in schematic design and troubleshooting, working with Op Amps, 555 Timers, and various tools.
- Proficient in programming languages: QBasic, Python, C++, MATLAB, C, Assembly, Verilog HDL, and Sage.
- Skilled in software tools: MS Word, MS Excel, MS PowerPoint, Adobe Photoshop, and Corel Draw.
- Extensive knowledge in Machine Learning (ML) with experience in ML Classification, Sentiment Analysis, Computer Vision, and more.
- Acquired hands-on experience in metal finishing techniques, including shining and polishing metal surfaces, utilizing various tools such as files, Dremel tools, and buffing wheels to achieve a high-quality finish.

Projects & Work Portfolio

- **Inductive Cross-Sectional Area Sensor for Bore Tube Measurement:** A collaborative project with peers involving the principle of mutual induction between a sensing coil and a virtual coil to measure the distance between them.
  Expected Completion: December 2025
- **Search and Rescue AI-enabled drones:** A collaborative project utilizing Python to develop intelligent drones with enhanced search and rescue capabilities, actively participating in integrating AI algorithms and drone technology to address autonomous navigation, obstacle avoidance, and real-time data analysis challenges.
- **Enhancing Lung Cancer Diagnosis with Regularized CNNs for Histopathological Image Classification:** The purpose of this project was to explore multiple methods of regularization to minimize overfitting in Convolutional Neural Networks and increase validation accuracy and generalization of the data.
- **8x8 LED Matrix MAX7219 Display controlled by Arduino via Bluetooth:** An interactive project featuring an 8x8 LED Matrix MAX7219 display, controlled wirelessly by Arduino through Bluetooth connectivity. Explored the use of HC-05 Bluetooth Module, Arduino MEGA, and Application for inputs.

Honors & Awards

- Member of Tau Beta Pi – The Engineering Honor Society — November 2023
- Quest Fest — September 2023
  Award presented by Associate Provost for Research
  People's Choice Award, presented by President of Norwich University
- University Scholar (GPA 3.60 – 3.99) — August 2023
- Secretary of IEEE - Eta Kappa Nu [Electrical Engineering Honors Society] — April 2023
- Norwich Engineers' Society, Peter E. Kyle Award — April 2023
- First-Year Student Award, University Scholar – 4.0 GPA Award — August 2022

Certificates

- CRLA International Tutor Training Program Certification — August 2023
- Google Cloud Skills Boost: — June 2023
  Attention Mechanism, Create Image Captioning Models, Encoder-Decoder Architecture, Generative AI Fundamentals, Introduction to Generative AI, Introduction to Image Generation, Introduction to Large Language
- Kaggle: — May 2023
  Pandas, Intro to Machine Learning, Feature Engineering, Intro to Deep Learning