

Kamal G. Oladele

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Education

Missouri University of Science and Technology (Missouri S&T), Rolla, MO	Exp. May 2026
• M.S. in Systems Engineering (GPA: 4.00/4.00)	
• Graduate Certificate in Computational Intelligence	
• Relevant Coursework: Deep Learning, Introduction to Neural Networks, Model-Based Systems Engineering (MBSE), Systems Architecting, Systems Engineering Analysis, Information-Based Design, Systems Life Cycle Costing, Mathematical Programming	
Sandip University, Nashik, India	May 2024
• B.Tech in Computer Science & Engineering (GPA: 3.46/4.00, Top 2%)	
Federal Polytechnic, Ile Oluji, Nigeria	Nov 2019
• National Diploma in Computer Engineering (GPA: 3.74/4.00, Top 1%)	

Research Interests

My research integrates systems engineering with artificial intelligence to design, model, and optimize complex systems. I am focused on:

- Model-Based Systems Engineering (MBSE) & Systems Architecting
- Generative AI and Large Language Models (LLMs) for Engineering Design
- Digital Twins and Cyber-Physical Systems
- AI/ML for Predictive Healthcare and Diagnostics
- Deep Learning, Foundation Models (SAM2), and Computer Vision
- Data Science for Intelligent Systems Design and Optimization

Publications & Manuscripts

1. Oladele, K., et al. (2024). **AI-Based Face Recognition Attendance System.** *International Journal of Innovative Research in Engineering & Multidisciplinary Physical Sciences*, 12(2).
2. Oladele, K., et al. (2024). **Development of a Microcontroller-based Anti-violence Billboard.** *International Journal of Innovative Research in Engineering & Multidisciplinary Physical Sciences*, 12(3).
3. Oladele, K. **LLM-Driven MBSE for Intelligence, Surveillance, and Reconnaissance (ISR) and Targeting System.** (Working Paper).
4. Oladele, K. **Generative-Augmented LoRA (GA-LoRA) – Option B (Latent Diffusion Perturbations).** (Draft Manuscript).
5. Oladele, K. **Shallow Neural Network for Early Detection of Heart Disease.** (Manuscript).

Research Experience

LLM-Driven MBSE for ISR Systems	Missouri S&T
• Investigated the use of LLMs (Grok, Gemini, ChatGPT) to generate SysML artifacts from system requirements for an ISR and Targeting System. Developed a full SysML model in Cameo.	

Bachelor's Thesis: AI-Based Face Recognition Attendance System [GitHub]	Sandip University
• Developed and published a real-time attendance system with >95% accuracy. Leveraged InsightFace, Haar Cascade, and FaceNet with MobileNetV2; deployed on AWS.	

Diploma Research Project: Remote Health Service Delivery	Federal Polytechnic
• Designed a mobile health van system using Dijkstra's algorithm for shortest-path routing. Integrated a PHP web app and Arduino/GSM/GPS for real-time patient monitoring.	

Selected Projects

Deep Learning for ECG Classification

Missouri S&T

- **(Ongoing)** Developing a comprehensive benchmark of deep learning architectures (including **CNN-BiLSTM, ResNet, WaveNet, and Transformers**) for multi-modal, multi-label cardiovascular disease classification on the public PTB-XL dataset (21,837 recordings from 18,885 patients).
- Designing a fusion architecture that combines a pretrained **1D ResNet** (for 12-lead ECG signals) with a **TabNet** model (for structured patient metadata like age and sex)
- The model fuses embeddings from both modalities into a dense classification head to predict up to 71 diagnostic statements, demonstrating a robust approach to signal and metadata fusion.

Crack Detection using SAM2 + LoRA [\[GitHub\]](#)

Missouri S&T

- Adapted the Segment Anything Model (SAM2) with a custom segmentation head. Fine-tuned the model using Low-Rank Adaptation (LoRA), achieving a 12% improvement in Dice and IoU scores.

Smart Exercise Bike Model

Missouri S&T

- Applied MBSE in Cameo to model a smart exercise bike. Demonstrated model-based validation and system integration (Requirements, BDD, IBD, State Machine).

Predictive Healthcare Models [\[GitHub\]](#)

Sandip University, Missouri S&T

- Developed and compared various ML algorithms and neural network architectures for the prediction of diabetes and cardiovascular disease.

GPS Spoofing Detection System

Missouri S&T

- Conducted requirements analysis, trade studies, and evaluation of “ilities” (reliability, manufacturability, cybersecurity) to enhance system resilience.

Movie Recommendation System [\[GitHub\]](#)

Bharat Intern

- Built hybrid collaborative/content-based filtering models in Python and scikit-learn.

Professional Experience

Student Technical Assistant – Systems Ops

Missouri S&T, Rolla, MO (Nov 2024 – Present)

- Performed data entry, cleanup, and verification tasks using CRM Softwares (Slate and PeopleSoft), ensuring accuracy of admissions data.
- Collaborated with cross-functional teams to maintain system integrity and enhance data management.
- Assisted in processing key admissions workflows, including test-optional bin management and scholarship data.

IT Fundamentals Student

Npower, St. Louis, MO (Aug 2025 – Present)

- Engaging in hands-on hardware configuration, including complete system assembly and disassembly.
- Conducting advanced troubleshooting simulations in Linux environments to resolve client-side issues.
- Mastering TCP/IP and OSI Model diagnostics to repair complex hardware, software, and networking faults.
- Utilizing Kali Linux to perform network analysis and MAC/IP address manipulation.

Data Science & Project Management Intern

Excelerate Inc. (Remote) (May 2025 – Sep 2025)

- Utilized Python (pandas, scikit-learn) and SQL to analyze and clean large datasets, including 2,979 learner records and over 55,000 duplicate entries, and developed a content-based recommendation system using cosine similarity to improve learner-program fit.
- Developed interactive dashboards with Looker Studio, analyzing marketing data to provide strategic recommendations that saved the company over \$85000.
- Conducted research on AI tools (GPT-4, Grok) and prompt engineering to design a gamified learning pilot, reducing content creation time by 40%.
- Collaborated in a cross-functional team to develop a Project Charter, Work Breakdown Structure (WBS), and Risk Register for a simulated enterprise transformation.

Project Manager & IT Specialist

J&K Delad Ventures Ltd. (Hybrid) (Mar 2019 – Jan 2025)

- Led digital transformation initiatives by developing over 10 custom web applications and database solutions that streamlined project management and inventory tracking for construction and engineering projects.

- Managed cross-functional teams of up to 20 members, ensuring timely execution and budget adherence.
- Established cybersecurity protocols and IT infrastructure to protect sensitive business data, enhance system security, and improve operational resilience across multiple engineering and contracting services.

Freelance Web & Software Developer

(Remote) (Oct 2019 – Present)

- Designed and deployed over 20 custom web/software applications using React, JavaScript, Python, and PHP.
- Engineered scalable backend solutions, integrating third-party APIs and AI models (e.g., Cohere LLM APIs).
- Optimized database architectures to ensure high performance and reliability.

Artificial Intelligence Intern

CognoRise InfoTech (Remote) (Jan 2024 – Mar 2024)

- Developed AI models using CNNs, achieving 99.11% accuracy in digit recognition.
- Implemented AI algorithms like minimax for interactive applications such as Tic Tac Toe.

Machine Learning Intern

Bharat Intern (Remote) (Dec 2023 – Feb 2024)

- Developed ML models for house price prediction, movie recommendations, and iris classification using Python, scikit-learn, and TensorFlow.

Data Analyst Intern

MeriSkill (Remote) (Nov 2023 – Dec 2023)

- Conducted data analysis on sales and diabetes projects using Power BI, SQL, Python, and Tableau.
- Applied predictive modeling to diagnose diabetes using medical datasets.

Cyber Security Intern

Verzeo Edutech Ltd. (Remote) (Jul 2021 – Sep 2021)

- Conducted penetration tests and simulated cyber-attacks to identify vulnerabilities.
- Configured and maintained network security settings to safeguard user data.

Technical Assistant Intern & IT Support

The Training Center (TTC), Nigeria (Oct 2018 – Feb 2019)

- Performed computer setup, troubleshooting, and OS installations (Windows, Ubuntu, Linux).
- Provided technical support, resolving hardware and software issues.

Teaching Experience

Computer Science Tutor

Airatpro Integrated Services, Nigeria (Oct 2020 – Feb 2021)

- Provided tutoring for Computer courses, Python, and Web development.
- Guided students through hands-on coding exercises, lab simulations, and practical assignments.

Diploma Course Tutor

Federal Polytechnic, Ile Oluji, Nigeria (Oct 2017 – Sep 2019)

- Assisted students in computer engineering labs (programming, networking, hardware configuration).
- Supported faculty in grading assignments and facilitating project work.

Technical Skills

Programming & Data: Python, Java, JavaScript, SQL, PHP, R, C++, HTML/CSS

AI & Machine Learning: PyTorch, TensorFlow, Scikit-learn, Keras, OpenCV, Pandas, NumPy, MATLAB

Foundation Models: Segment Anything Model (SAM2), LoRA Fine-Tuning, Transformers, Diffusion Models

Systems Engineering: Model-Based Systems Engineering (MBSE), SysML, AnyLogic, UML, MagicDraw/Cameo, Requirements Analysis, Trade Studies, Systems Architecting, Systems of Systems (SOS)

Platforms & Tools: Git, AWS (EC2), Oracle Cloud Infrastructure (OCI), Azure DevOps, Linux, Power BI, Tableau, Looker Studio, Unity

Networking & IT: TCP/IP, OSI Model, Hardware Configuration, Troubleshooting, Cybersecurity, Penetration Testing, Cisco Packet Tracer

Certifications

- Oracle Cloud Infrastructure (OCI) 2025 Certified Generative AI Professional (In progress)
- Oracle Cloud Infrastructure (OCI) 2025 Certified Data Science Professional
- Oracle Cloud Infrastructure (OCI) 2025 Certified AI Foundations Associate
- Google IT Support Professional Certificate
- CompTIA A+ (In progress)
- CompTIA ITF+ (Tech+)
- AWS Educate Machine Learning Foundations
- Introducing Generative AI with AWS
- IBM Cybersecurity Fundamentals & Machine Learning Fundamentals [cite: 157, 993, 1214]
- IC3 Digital Literacy Certification

Professional Affiliations & Leadership

- **Institute of Electrical and Electronics Engineers (IEEE)**
 - Graduate Student Member
 - Active Member: **Computational Intelligence Society**, Systems Council, Computer Society
- **INCOSE (International Council on Systems Engineering)**
 - CAB Associate Member, Missouri S&T
- **Hagan International Scholarship**, Missouri S&T (2024)
- **Treasurer**, National Association of Computer Engineering Students, FEDPOLEL (2018–2019)
- **Team Lead, Technical Assistant Department**, Ozibook Tech Solutions Pvt. Ltd. (2023)