

Kolawole Marvellous Olaoluwa

Computational Designer & AI Specialist

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Education

2019 – 2025 **Bachelor of Technology (B.Tech), Architecture**, Federal University of Technology Akure (FUTA), Akure, Nigeria
Coursework highlights: Computational Design, Sustainable Systems, Building Information Modeling (BIM), Urban Analytics, and Parametric Design.

Technical Skills

Machine Learning	TensorFlow, Scikit-learn, PyTorch, Keras
Data Analysis & Visualization	Python (Pandas, NumPy), Matplotlib, Seaborn
Natural Language Processing	NLTK, spaCy, Transformers (BERT, GPT)
Web Dev. & Deployment	FastAPI, Flask, Django, RESTful APIs
Database Management	SQL, PostgreSQL, MongoDB
Cloud & DevOps	AWS (EC2, Lambda, Amplify, Lex), Docker, CI/CD (GitHub Actions)
Architecture Tech	BIM, Parametric Scripting (Grasshopper/Dynamo concepts), AutoCAD, Revit
Professional	Technical Writing, Model Deployment, Statistical Analysis, A/B Testing

Experience

- Mar 2025 – **AI & Computational Design Intern**, CipherSense AI, Remote
- Aug 2025
- Developed and deployed end-to-end machine learning models to solve complex spatial analysis problems, enhancing building performance simulation.
 - Designed intelligent algorithms using TensorFlow to optimize architectural layouts based on environmental data (sunlight, airflow) and user behavior patterns.
 - Built automated data collection tools for processing large-scale urban datasets, improving the efficiency of data pipelines for generative design.
 - Deployed a Retrieval-Augmented Generation (RAG) system using FastAPI to create a chatbot for accessing and interpreting complex building codes and zoning regulations.

- Sep 2024 – **Data-Driven Design Consultant**, Teckplus Digital Solutions, Remote
Present
- Analyze and interpret large datasets from building management systems (BMS) to extract actionable insights for energy efficiency and occupant comfort.
 - Design and implement custom AI tools and algorithms to automate routine design tasks and enhance operational efficiency for architectural firms.
 - Build scalable data pipelines to support intelligent automation in design-to-fabrication workflows.
 - Create interactive visualizations and dashboards to communicate complex spatial and performance findings to non-technical stakeholders and clients.
- Nov 2022 – **Freelance ML Engineer (AEC Focus)**, Various Clients, Remote
Present
- Delivered custom NLP and Computer Vision solutions for clients in the Architecture, Engineering, and Construction (AEC) industry.
 - Developed computer vision models (PyTorch) for object detection on construction sites (e.g., safety-hat detection) and automated segmentation of floor plans.
 - Implemented solutions for text classification of building-related documents and sentiment analysis of community feedback on urban projects.
 - Integrated and fine-tuned Large Language Models (LLMs) to enhance information retrieval from extensive architectural libraries and project archives.
- Jan 2024 – **Computational Design Researcher**, SozoRock, Remote
Apr 2024
- Spearheaded the development of intelligent "design-assist" chatbots using NLP models for intent recognition, entity extraction, and sentiment analysis.
 - Led a cross-functional team to design conversational flows that integrated complex building logic and design requirements for a seamless user experience.
 - Built and deployed ML models using TensorFlow and NLTK, optimizing them with caching and scaling strategies on AWS (EC2, Lambda).
 - Integrated chatbot models into full-stack applications with a React-based UI and Flask/Django APIs, ensuring secure and scalable deployment.
- Mar 2021 – **Junior Machine Learning Engineer**, Intellidane, Akure, Nigeria
Jun 2022
- Developed predictive models using sensor data (OHLC-style) to identify trends in building energy consumption and execute automated adjustments.
 - Built object detection models with TensorFlow and PyTorch, improving image classification accuracy for identifying architectural styles and components from images.
 - Collaborated with senior engineers to deliver integrated solutions, provided comprehensive documentation, and supported post-deployment optimization.

Certifications & Virtual Internships

- May 2023 **AI Engineer Certification**, IBM (via Coursera)
Comprehensive certification covering machine learning, deep learning, NLP, and computer vision, solidifying expertise in applying advanced AI techniques.
- Aug 2023 **Virtual Data Science Intern**, Boston Consulting Group (BCG) (via Forage)
Analyzed customer behavior data to provide insights for marketing strategies. Developed predictive models (Scikit-learn) to optimize customer targeting.
- Aug 2023 **Virtual Data Science Intern**, Cognizant (via Forage)
Conducted data preprocessing and built machine-learning models to predict customer churn, collaborating with data engineers on data quality and deployment.
- Aug 2023 **Virtual Data Science Intern**, British Airways (via Forage)
Analyzed passenger data and developed a recommendation system for personalized travel offers using machine learning to enhance customer experience.