JANE ODUM

ATHENS, UNITED STATES 7623168444

DETAILS

Athens
United States
7623168444
janeodum41@gmail.com

LINKS

LinkedIn
Website

SKILLS

Machine Learning & Deep Learning
Scalable System Design &
Distributed Computing
Natural Language Processing &
Computer Vision
Generative AI & Diffusion Models
Time Series Forecasting
C/C++
Python
Java
TensorFlow
PyTorch
LLM

HOBBIES

Painting, Dancing, Working out and travelling.

EMPLOYMENT HISTORY

Machine Learning Engineer (Intern) at Stripe, South San Francisco

May 2025 — Aug 2025

- Developed and deployed ML models for secret key leak detection, cutting detection latency from 4.5 days to under 1 hour and preventing multi-million-dollar annual fraud losses.
- Engineered large-scale feature pipelines in Spark/Databricks (500M+ records across Iceberg tables), integrated with Shepherd and Airflow for production-ready workflows.
- Expanded detection coverage by onboarding new API-call signals (OAuth, Connect), boosting recall on confirmed leaks to 94% while ensuring system observability with custom dashboards.

Graduate Teaching Assistant at University of Georgia, Athens

Jan 2021 — Present

- Collaborated with Prof. Shelby Funk and Dr. Michael Cotterell in delivering course content for Theory of Computing and Human-Computer Interaction.
- Evaluated and graded assignments and exams with adherence to university grading standards, providing timely and constructive feedback.

Software Developer (Intern) at Orbital Schools, Ilorin

May 2018 — Aug 2018

- Spearheaded the development of dynamic websites utilizing the LAMP stack, enhancing client digital presence with Linux, PHP 5, CSS, and MySQL.
- Executed seamless integration of payment processing capabilities by embedding PayStack and other APIs into Orbital Schools' web platform.

EDUCATION

PhD Computer Science, University of Georgia, Athens

Dec 2026

- Research Interest: Time Series Forecasting, Generative AI, NLP, Content understanding using large Language models and multi-modal machine learning.
- Coursework: Machine Learning, Algorithms, Software Engineering, Data Mining, Trustworthy Machine Learning, Databases, Advanced Robotics, Human-Computer Interaction and Advanced Representation Learning.

Software Engineering, 42 Silicon Valley, Fremont

Dec 2019 — Dec 2020

Bsc Computer Science, University of Ilorin, Ilorin

Oct 2016 — Oct 2019

PUBLICATION

Adaptive Quantile Guidance in Diffusion Models: Multi-Dataset Learning for Pandemic Time Series. ICMLA 2025 (Accepted).

- Developed AQDiff, a diffusion-based framework for epidemiological forecasting, leveraging multi-dataset pre-training (CDC influenza, COVID-19, RSV) and adaptive quantile guidance to dynamically adjust prediction intervals. Achieved 73.3% lower MAE than state-of-the-art models (CSDI, PatchTST) across pandemic scenarios.
- Introduced real-time error feedback via exponentially weighted residual statistics, enhancing volatility adaptation with <10% computational overhead. Demonstrated robustness in sparse data methods and statistically significant improvements during outbreak surges.

PROJECTS

EpiCast: Multi-Modal AI Epidemiological Surveillance System

- Built a mobile-first disease surveillance platform for West Africa (ECOWAS) combining fine-tuned medical LLMs with audio AI for syndromic monitoring and cough-based respiratory illness detection.
- Fine-tuned and quantized MedGemma 4B to GGUF format for on-device inference, enabling a complete offline AI stack on mobile devices with sub-second response times and zero cloud dependency.
- Integrated MedGemma SigLIP for clinical image triage, HeAR audio models for cough classification, and a multilingual NLP pipeline trained on 3,400+ corpus-grounded examples across French, Hausa, and Yoruba.
- Designed a 4-tab mobile interface (Dashboard, Intake, Alerts, Reports) with real-time syndromic heatmaps and automated situation report generation using MedGemma 27B.

Omnnia: AI-Powered Animated Love Story Generator

- Engineered a full-stack generative AI pipeline that transforms couples' narratives into personalized animated short films using multi-modal large language models for story understanding, scene decomposition, and character-consistent image generation.
- Implemented a two-stage generation architecture: LLM-driven scene image synthesis with persistent character grounding from reference photos, followed by image-to-video animation with cinematic motion and camera control.
- Built a React frontend with conversational story input flow and a Node.js/Express backend orchestrating model inference, video assembly, and cloud storage via Cloudflare R2.

Pincel: Research Paper to Architecture Diagram Converter

- Developed an AI-powered tool that automatically generates publication-quality architecture diagrams from research papers and codebases, reducing manual diagram creation time from 4-8 hours to minutes.
- Built a two-stage pipeline: PDF parsing and methodology extraction using fine-tuned language models, followed by structured TikZ/SVG diagram generation trained on a curated dataset of ML conference papers.
- Designed for academic workflows with support for NeurIPS, ICML, and ICLR diagram styles, enabling researchers to produce editable, camera-ready figures directly from paper text.

OmniAsset: AI-Driven Consolidated Asset Tracking Platform

- Built a React Native mobile app that tracks six asset classes (stocks, crypto, real estate, vehicles, precious metals, cash) with live market pricing, unified net worth calculation, and AI-powered portfolio risk analysis.
- Integrated a financial LLM agent that performs personalized portfolio critique, buy/sell signal generation, and diversification analysis based on the user's actual holdings and cash flow data.
- Implemented a FIRE calculator with interactive wealth projections, a financial health scoring engine, and a secure document vault with automated insurance coverage gap detection.

Prompt Fusion in Stable Diffusion

- Optimized image generation by consolidating positive and negative prompts into a single efficient pass. Utilized LPIPS and Siamese networks for evaluation, and BERT for prompt similarity, improving optimization time and image-prompt alignment.

HumorAI: Enhancing LLM for Implicit Humor and Sentence Analysis

- Engineered an advanced LLM model for sentiment analysis integrating humor recognition using contrastive loss on SBERT and BERT. Achieved 15% improvement in accuracy on chatbot and Twitter similarity tasks over existing models.

StockCluster: Enhancing Investment Portfolios

- Devised a clustering algorithm for stock market analysis, achieving a 6.89% ROI increase by optimizing portfolio diversification.

Risk-Aware Task Allocation in Multi-Robot System

- Developed a risk-aware multi-robot task allocation model factoring in task dependencies and robot characteristics, increasing operational efficiency by 40% and improving task completion rates.

LEADERSHIP

GOOGLE DEVELOPER STUDENT LEAD at Google, Ilorin

Jul 2018 — Aug 2019
- As a Google Developer Student Lead, guided 300+ students across 11 African countries in web and mobile development, focusing on local challenges.

UNITED AMBASSADORS (MUN) at Model United Nations, New York City

Aug 2018 — Aug 2018
- Represented the US as a UN Ambassador, advocating for global peace and spearheading immigrant and refugee rights discussions among 55 international ambassadors.