Alvin I. Ugo-Mgbemene

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EDUCATION

Texas A&M University, College of Engineering College Station, TX
B.S.E., *magna cum laude*, Electrical & Computer Engineering, May 2023 — GPA: 3.73/4.0

RELEVANT COMPUTER SCIENCE FOUNDATIONS

Programming Design Concepts: TAship guiding 200+ students in Python and C++; taught procedural and object-oriented principles, modularization, and debugging. Reinforced through projects such as a String Calculator (C++) and process automation scripts, reflecting TAMU's CSCE 121 rigor.
Data Structures & Algorithms: Led algorithm workshops and LeetCode sessions on recursion, dynamic programming, and graph traversal. Built a Seam Carving Algorithm (C++) applying energy maps and pathfinding logic.
Computer Systems & Architecture: ECEN 248/350 labs on digital logic, FSMs, and processor design; applied system-level reasoning on timing, memory, and performance (CSCE 312/313 equivalent).
Software Engineering / Research: Contributed to the SpaceCRAFT research program (ECEN 491), developing a distributed spacecraft sandbox (Python, ZeroMQ) with multi-module communication, control algorithms, and Git versioning.

SKILLS

Programming: Python, C++, SQL, Verilog
AI & Data Science: PyTorch, TensorFlow, scikit-learn, NumPy, pandas, Matplotlib, OpenCV
Software & Tools: Git, Docker, Jupyter Notebook, VS Code, Linux (Bash), Power BI, Unity3D, Multisim, Arduino, ZeroMQ, PySide6
Cloud & Deployment: Google Colab, AWS (SageMaker), Streamlit, FastAPI

EXPERIENCE

Texas Instruments, Product Development Engineer Sherman, TX
Jun 2023 – Present

- Designed and deployed a PySide6 GUI with a modular backend engine that translated design inputs into executable wafer fabrication flows, using JSON schema parsing and automated rule checks.
- Reduced design-to-fabrication planning from ∼2 weeks to <1 day through simulation, validation, and predictive analytics modules, generating ≈ $100K annual savings.
- Developed defect-pattern and correlation analytics across wafer yield, defect density, inline metrology, and tool commonality to support root-cause investigations.
- Received internal 5S innovation award and nomination for TI-wide technical demo for scalable systems impact.

Procter & Gamble, Product Supply Engineering Intern Cincinnati, OH
May 2022 – Aug 2022

- Developed a proof-of-concept ML pipeline (Python, pandas, scikit-learn) to model resource consumption and predict process bottlenecks.
- Built ETL and feature-engineering pipelines from sensor logs; trained regularized regression models to forecast usage.
- Presented model outputs in Power BI dashboards, informing process adjustments and contributing to $1.5M projected annual savings.

Texas A&M University, Undergraduate Research Assistant College Station, TX
Jan 2022 – May 2022

- Built a distributed simulation sandbox (Python, ZeroMQ) for multi-module spacecraft modeling with real-time data exchange.
- Implemented control and signal-processing algorithms improving computational throughput by 25%.

Texas A&M University, Python Teaching Assistant College Station, TX
Aug 2020 – May 2022

- Guided 200+ students in Python programming, data structures, and debugging.
- Hosted biweekly algorithm workshops and mock interviews on computational problem solving.

LEADERSHIP & SERVICE

Process Analytics Training Lead, Texas Instruments Sherman, TX
Aug 2025 — Led technical training sessions for process engineers after deploying a fab analytics platform. Taught statistical metrics (p-value, FDR, surprisal) for correlating yield/defectivity to inline metrology and tool data.
NSBE & Black Student Alliance College Station, TX
Aug 2019 – Jul 2023 — Organized resume and networking workshops (75+ students), managed finances for 100+ members, and mentored underclassmen on research and internship prep.