Will Maberry

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EDUCATION

The University of Texas at Arlington (UTA)
B.S. in Computer Science Aug. 2022 – May 2026
Fundamentals of AI Certificate
GPA: 3.8+ (6× Honor Roll)
Maverick Academic Scholarship ($8000/year)

TECHNICAL SKILLS

Forecasting & Modeling
Spatiotemporal leakage-safe forecasting; ensembling; rare-event modeling

Machine Learning & Data Science
TensorFlow; PyTorch; Scikit-learn; Imb-learn; Optuna

Geospatial Analysis
GeoPandas; GEE; Folium/Leaflet; raster processing

Programming & Data
Python; C; Java; SQL; Bash; Pandas; NumPy

Pipelines & Deployment
FastAPI; Flask; Docker; automated retraining pipelines

Visualization
Matplotlib; interactive dashboards; risk mapping

PROJECTS

American Sign Language (ASL) Translator

- Curated an ASL dataset of over **2,000 labeled gesture samples** using OpenCV and MediaPipe.
- Trained a neural network, achieving **90%+ accuracy** for reliable real-time ASL translation.
- Integrated multithreading for simultaneous video capture, model inference, and text-to-speech.

Algorithm Learning Platform

- Built an interactive web platform visualizing **20+ algorithms and data structures** (sorting, graphs, heaps, trees, etc.).
- Adopted by UTA Computer Science faculty, supporting **50+ students per semester** in lectures and self-paced study material.

Neural Network Walkthrough

- Implemented a feedforward neural network from scratch on the MNIST handwritten digits dataset, achieving **95%+ accuracy**.
- Created a **beginner-friendly** walkthrough with detailed visualizations of training progress, backpropagation, loss curves, and weight updates.

Queen's Logic Puzzle

- Built and deployed a full-stack puzzle game with a bespoke board generation algorithm, ensuring unique solutions.

EXPERIENCE

USDA ARS — Research Assistant Jul. 2025 – Present

- Developing a national-scale HPAI outbreak **public-facing early-warning system** that produces county-level forecasts one month ahead.
- Building an **end-to-end, spatiotemporal forecasting pipeline** with weighted model blending, threshold tuning, and strict temporal leakage checks.
- Designing an **interactive geospatial dashboard** that translates ML forecasts into **biosurveillance insights** for non-technical audiences.
- Engineering **synthetic future-month features** using ridge-based climate interpolation.
- Performing **advanced diagnostics** including calibration curves, ternary confusion matrices, K-means/PCA clustering, and prevalence-bias assessments.

USDA ARS — Research Intern May 2025 – Jul. 2025

- Achieved **75%+ balanced accuracy** on multi-year national classification data through feature engineering, Machine learning, and threshold tuning.
- Developed **imbalanced-learning and gradient-boosting ensembles** for national-scale county-level pseudo-forecasting.
- Collaborated with **national program leaders** to support data-driven decisions in HPAI surveillance across the continental U.S.
- Conducted **feature-importance and explanatory analyses** to identify climatic, agricultural, and migratory predictors of HPAI outbreaks.

OpenAI — Engagement Manager Jul. 2024 – Present

- Lead engagement strategy for OpenAI's largest public community, connecting **850k+ global users**.
- Launched interactive initiatives and bi-monthly newsletters, generating a **120% increase in engagement**.

TEACHING & COMMUNITY

- **UTA Operating Systems TA**: Taught ∼ 120 students; held multiple weekly office hours, covering multi-threading, scheduling, memory management, and more.
- **OpenAI Community Volunteer**: Supported global AI education initiatives and technical discussions (2022–2024).

LEADERSHIP

Association for Computing Machinery (ACM)
Education Director

HackUTA 7 (2025)
Experience Officer

The Wesley @ UTA Board of Directors
Student Representative & Lead Team Member