Will Maberry

will-maberry | willmaberry.com

EDUCATION

The University of Texas at Arlington (UTA)
B.S. in Computer Science
Aug. 2022 – May 2026 *GPA: 3.8+ (4x Dean's List)*

TECHNICAL SKILLS

Experienced in applying machine learning to public-good research, accessibility, and STEM education.

Programming Languages
Python | C | Java | JavaScript | Elm | Scala

Machine Learning & Data Science
TensorFlow | PyTorch | NumPy | Pandas | Scikit-learn | Imb-learn | Optuna | SHAP

Geospatial & Visualization
GeoPandas | GEE | Leaflet | Folium | Matplotlib

Backend & APIs
FastAPI | Dash | Pydantic | Jinja2

Databases
SQLite | MySQL | MongoDB | SQLAlchemy

Web & UI
HTML | CSS | Markdown | LaTeX | Canvas

DevOps & Deployment
Docker | GitHub Actions | Heroku | Koyeb

PROJECTS

American Sign Language (ASL) Detector
Accessibility & AI

- Curated an ASL dataset, consisting of **2,000+ gesture samples** with OpenCV/MediaPipe.
- Trained a TensorFlow model with **90%+ accuracy**, ensuring reliable ASL translation.
- Implemented multithreading for live video, model inference, and text-to-speech communication.

Algorithm Learning Platform
STEM Education

- Built an interactive visualization platform with **20+ algorithm/data structure demos** (sorting, graphs, heaps, etc.).
- Actively used by UTA CS faculty, supporting **120+ students/semester**.

MNIST Neural Network Walkthrough
AI & STEM Education

- Implemented a feedforward neural network from scratch, training on the MNIST dataset to achieve **95%+ test accuracy**.
- Designed a **beginner-friendly** neural network walkthrough, leveraging visualizations (backpropagation, loss metrics, weight updates, and more) to aid in key concept understanding.

LEADERSHIP

- Association for Computing Machinery (ACM) — *Education Director*
- HackUTA 7 (2025) — *Experience Officer*
- The Wesley Board of Directors — *Student Rep & Lead Team Member*

EXPERIENCE

USDA ARS — Disease Researcher Jul. 2025 – Present

- Extending prior research into a **public-facing geospatial risk platform**, creating accessible decision-support tools.
- Designing pipelines to ingest near real-time environmental/climate data, retrain models, and deploy updated county-level monthly forecasts.
- Developing interactive web visualizations with **personalized, location-aware risk insights**, supporting disease prevention and rapid response.
- Translating research discoveries into actionable insights for nationwide poultry producers.

USDA ARS — Research Intern May 2025 – Jul. 2025

- Collaborated with **national program leaders and regional USDA research leads**, enabling data-driven decision-making in national disease surveillance of Highly Pathogenic Avian Influenza (HPAI).
- Investigated drivers of HPAI spread, building and tuning classification and forecasting machine learning ensemble models (**gradient boosting, imbalanced learning**).
- Achieved **80%+ balanced accuracy** on multi-year, monthly-county national-scale data.
- Conducted rigorous feature analysis to identify environmental and agricultural factors most predictive of outbreaks.
- Built modular preprocessing/postprocessing pipelines with geospatial awareness, decision threshold optimization, and detailed model reporting.

OpenAI — Engagement Manager Jul. 2024 – Present

- Curated engagement strategy for OpenAI's largest public community, supporting **140,000+ global users**.
- Launched interactive initiatives and bi-monthly newsletters, driving a **120% increase in engagement** within first six months.

OpenAI — Community Volunteer Sep. 2022 – Jul. 2024

UTA — Operating Systems TA Jan. 2025 – May 2025

- Instructed and mentored **120 students** on OS concepts, including deadlocks, scheduling, and memory management.
- Selected as only the **2nd undergraduate TA in 14 years**, recommended directly by faculty.
- Guided projects (custom `malloc()`, multithreading, shell creation) with emphasis on real-world applications.