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

Dedicated to advancing AI for good through public research and student empowerment.

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) Translator
AI for Good

- 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 output.

Algorithm Learning Platform
STEM Education

- Built an interactive web platform visualizing **20+ algorithms and data structures** (sorting, graphs, heaps, trees, etc.).
- Adopted by UTA Computer Science faculty, supporting **120+ students per semester** in lectures and self-paced study material.

Neural Network Walkthrough
AI & STEM Education

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

LEADERSHIP

Association for Computing Machinery (ACM)
Education Director

HackUTA 7 (2025)
Experience Officer

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

EXPERIENCE

USDA ARS — Disease Researcher Jul. 2025 – Present

- Continue advancing prior research by transforming Highly Pathogenic Avian Influenza (HPAI) outbreak modeling into an automated, **public-facing early-warning** system.
- Design and deploy an **interactive geospatial forecasting application** that visualizes county-level HPAI risk forecasts up to one month in advance, providing location-aware, **personalized insights** for producers and analysts.
- Develop a **continuous Machine Learning (ML) pipeline** that ingests live environmental and climate data, retrains ensemble forecasting models, balances data for rare-event detection, and optimizes performance in real time.

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 and 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

- Lead engagement strategy for OpenAI's largest public community, connecting **700k+ global users**.
- Launched interactive initiatives and bi-monthly newsletters, driving a **120% increase in engagement** within the 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.