Armando Albornoz

albornoz.armando31416@gmail.com | github.com/armandoalbornoz | portfolio

EDUCATION

University of Florida — Aug. 2022 – May 2025
B.S. in Computer Science & B.S. in Mathematics; GPA: 3.92

Georgia Institute of Technology — Jan. 2026 – Dec 2027
M.S. in Computer Science

EXPERIENCE

Undergraduate Research — Jan 2025 – May 2025
University of Florida — *Gainesville, FL*

- Studied refinement and angle optimization for order-2 Delaunay triangulations.
- Proposed and implemented a novel algorithm using 3D convex hulls to incrementally construct an order-2 triangulation; the approach stands out for its simplicity and geometric clarity.
- Performed statistical analysis of angle distributions across various point sets, finding evidence that refinement methods of order-1 triangulations generalize to order-2 triangulations.

Undergraduate Research — Oct 2023 – May 2024
University of Florida — *Gainesville, FL*

- Co-authored a paper analyzing Hausdorff and Gromov-Hausdorff distances between metric spaces.
- Contributed foundational definitions and proof structures supporting the main theorems; presented findings at the UF Research Math Symposium.
- Published on arXiv.

PROJECTS

EmberAI | *OpenAI, Typescript, Vue.js, Electron.js* — Oct 2025 – Present

- Developing an intelligent, fully animated desktop companion capable of real-time speech, chat, and gameplay.
- Integrating multimodal AI via OpenAI and DeepSeek APIs for speech synthesis, emotion-aware dialogue, and conversational memory, with plans for future model fine-tuning.
- Building a cross-platform Electron + Vue.js interface featuring persistent on-screen animation, reactive gestures, and microphone-driven interaction.
- **Goal:** Deploy EmberAI as **Twitch streamer**, capable of engaging with audiences in real time.

Rain Prediction - End-to-End ML Pipeline | *MLflow, DVC, AWS* — July 2025 – August 2025

- Built a modular, configuration-driven pipeline to predict rainfall using Open-Meteo API data.
- Developed an ETL pipeline to fetch, transform, and load weather data into a PostgreSQL RDS instance.
- Trained multiple estimators and versioned data/models with DVC, and tracked metrics in MLflow.
- Deployed a Streamlit app serving real-time rainfall predictions from the latest production model.

Vision Transformer Implementation | *Python, PyTorch* — May 2025 – July 2025

- Implemented and compared ViT and EfficientNetB2 architectures for multi-class food classification.
- Fine-tuned both models using transfer learning on a custom dataset.
- Deployed the best-performing model to Hugging Face Spaces using Gradio.

Angle Optimization in Order-2 Delaunay Triangulations | *C++, Python, Triangle* — Jan 2025 – May 2025

- Refined order-1 and order-2 Delaunay triangulations to compare their angle distributions using statistics.
- Developed a barycenter lifting and convex hull projection algorithm.
- Compared the barycenter lifting algorithm against the rhomboid tiling algorithm.
- Built an interactive frontend to visualize triangulations and report angle distribution results.

TECHNICAL SKILLS

Python, SQL, PyTorch, NumPy, Scikit-Learn, Pandas, Transformers, Machine Learning