

Ali Abouelazm

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Education

Texas A&M University

Aug. 2023 – May 2027

Bachelor of Science in Data Engineering | Minor in Mathematics and Statistics

College Station, TX

- Relevant Coursework: Linear Algebra, Database Systems, Data Structures & Algorithms, Quant Models for Machine Learning, Optimization of Analytics, Computational Data Science, Differential Equations.

Experience

Texas A&M AgriLife

Mar. 2026 – Present

Machine Learning Researcher

College Station, TX

- Building **PyTorch**-based predictive models on **50GB+** of livestock biosensor data to forecast health indicators, iterating on model architecture and feature design across **3+** active research deployments.
- Architecting scalable **ML** pipelines on **AWS** to ingest and process raw biological data streams, reducing time-to-insight for field researchers and enabling faster experimental iteration.
- Implementing automated feature engineering workflows to extract health signals from noisy sensor inputs, cutting data preprocessing time by **35%** and improving model training throughput.

TCG Digital Solutions

May 2025 – Aug. 2025

Data Science Intern

Somerset, NJ

- Architected an end-to-end **CV** pipeline using **Gemini Pro** and **OpenCV** to automate soccer highlight extraction; achieved **95%** precision across **100+** match hours and reduced manual processing by **80%**.
- Developed and tuned gradient-boosting models (**XGBoost**, **CatBoost**) on **1M+** rows of tracking data; utilized **SHAP** values to extract tactical insights into dynamic player performance parameters.
- Optimized inference speed for real-time video modules via multi-threaded **Python** processing, enabling the extraction of match-critical events with **near-zero** delay for athletic analysis teams.

Texas A&M University, ENGR 102

Aug. 2025 – Dec. 2025

Undergraduate Teaching Assistant

College Station, TX

- Mentored **100+** students in **Python**-based problem-solving, data structures, and debugging across **15** weekly lab sessions, ensuring algorithmic efficiency and foundational technical mastery.

Projects

Sonus (Agentic Smart Assistant) | *Python, FastAPI, scikit-learn, SQLite, React, WebSockets*

Feb. 2026

- Built an agentic **LLM**-powered assistant using **FastAPI** and **React** that orchestrates **4+** APIs to understand user intent and autonomously execute multi-step routines in real time.
- Trained personalized stress predictors using **scikit-learn** on biometric data from **3** wearables with real-time **WebSocket** reinforcement loops for continuous adaptation.

Wearable EMG HCI System | *Python, Signal Processing, Machine Learning, Hardware Integration*

Feb. 2026

- Architecting a wearable surface-**EMG** and **IMU** system that classifies muscle-intent gestures into hands-free computer commands, targeting accessibility for users with severe motor impairments.
- Built a real-time **Python** signal processing pipeline to filter and decode noisy sEMG signals into discrete system commands with low latency, enabling reliable gesture recognition from raw hardware input.

Leadership / Extracurricular

Lovable.dev

Jan. 2026 – Present

Campus Ambassador

Texas A&M University

- Hosted campus-wide technical workshops to evangelize **Lovable.dev**'s **AI**-driven web application platform to **200+** engineering students, rapidly expanding the local active developer user base.

TAMU Datathon

Mar. 2025 – Present

Challenges Organizer

Texas A&M University

- Directed the creation of Data Science challenges for **500+** students, utilizing **Python**, **SQL**, and **scikit-learn** to develop rigorous **ML** problem sets tailored for university coding events.

Technical Skills

ML & AI: PyTorch, TensorFlow, Scikit-learn, LLM Tool Calling (OpenAI/Gemini APIs), XGBoost, OpenCV.

Languages: Python, SQL, C/C++, TypeScript, JavaScript, R.

Data & Cloud: AWS (S3, Athena), PostgreSQL, Snowflake, Docker, Git, FastAPI, WebSockets.

Libraries: pandas, NumPy, Matplotlib, Seaborn, Dask, SciPy.