# Ashkan Arabi

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## EDUCATION

**Bachelor of Science, Computer Science**                                                     December 2025
The University of Texas at El Paso                                                                    GPA: 3.93

## EXPERIENCE

**Capital One: Software Engineering Intern**                       June 2025 - August 2025 | McLean, VA
- Built & deployed anomaly-detection pipeline for Capital One's card decisioning system, notifying SREs of malfunctioning ML models and reducing incident-response time **from 4+ hours to <15 mins**.
- Wrote highly optimized **Databricks SQL** & evaluated warehouse sizes to minimize pipeline cost & latency.
- Extended **Java**-based plugin to log custom **Apache Spark** data lineage events using a YAML specification.
- Applied **test-driven development** using **JUnit** and **Mockito** to ensure robust, maintainable code.

**Texas Instruments: Information Technology Intern**              May 2024 - August 2024 | Dallas, TX
- Reduced production line costs by ~**34%** by deploying **Docker** infrastructure for wafer transporter robots.
- Met with 10+ stakeholders to configure **Oracle SQL** databases, REST APIs, and documentation.

**UTEP Vision and Learning Lab: Undergraduate Research Assistant**   January 2024 - May 2024 | El Paso, TX
- Contributed to creation of autistic vs neurotypical speech classifier by creating synthetic training data.
- Built tone-changer by fine-tuning **HuggingFace** models to change normal tone to autistic.
- Implemented neural style-transfer model in **PyTorch** to explore usage for accent-changing.
- Increased evaluation script performance by **144x** reimplementing KNN in PyTorch to utilize GPU.

**Temple University: Research Intern**                            June 2023 - July 2023 | Philadelphia, PA
- Published paper in **ACM MobiHoc** about using Wi-Fi CSI for hand gesture recognition on smartphones.
- Developed CNN model to classify 5 gestures in 6 scenarios using **TensorFlow** with **>90% accuracy**.

## PROJECTS

**Movie Rec Engine** ⧉ | FAISS, Redis, gRPC, PyTorch, FastAPI, Postgres, AWS
- Implemented production-grade collaborative-filtering-based movie recommender, deployed to **AWS**.
- Separated retrieval & ranking services for independent scaling, connected by **gRPC** for minimum overhead.
- Used **FAISS** for GPU-accelerated candidate retrieval & **Redis** to reduce repeated embedding lookups.

**Ashdocs** ⧉ | Go(Golang), Websocket, Automerge
- Created Google Docs clone in **Go**, able to handle multiple users' parallel real-time edits on documents.
- Integrated **Automerge** CRDTs to ensure conflict-free merging of simultaneous user edits.
- Designed **Websocket** event pipeline handling per-document broadcast and state propagation.
- Built operation log in **Pebble key-value store** for storing & restoring doc state.

**Newsbridge (news.ashkan.zone)** ⧉ | FastAPI, React, Postgres, JavaScript, Docker, Ollama, Gemini API
- Increased access to diverse news by creating an AI RSS news translator & orator with **55 GitHub stars**.
- Ensured load-balancing & scaling capacity by using a **Docker Compose microservice architecture**.
- Allowed instant playback using **async** programming to concurrently generate summary & play audio.

## SKILLS

**Languages:** Python, Java, JavaScript, TypeScript, SQL, Go (Golang), Dart, Vala, HTML/CSS, Bash shell,
**Libraries:** ReactJS, PyTorch, TensorFlow, scikit-learn, NumPy, Django, JUnit, FastAPI, Flask, Spring Boot,
**Tools:** Linux, Git, GitHub, Docker, AWS, Google Cloud(GCP), MongoDB(NoSQL), PostgreSQL, MySQL, Kafka, Cursor,