

ABDULRAHMAN ALSHAHRANI

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Software engineer and researcher with strong foundations in machine learning, distributed computing, and full-stack development, focused on translating research insights into scalable and reliable ML systems.

EDUCATION

King Abdullah University of Science And Technology

Master of Science in Computer Science

Dec 2026

Thuwal, Saudi Arabia

Relevant Coursework Math of Machine Learning, Data Analytics, Computer Networks, Concurrency

The University of Texas at Austin

Bachelor of Science in Computer Science; **GPA: 3.64/4.00**

May 2025

Austin, Texas, United States

Relevant Coursework Machine Learning, Virtualization, Cloud Computing, High Performance Computing, Computer Graphics

SKILLS

Languages Python, C, C++, Java, JavaScript, TypeScript, Go (golang), SQL

Technologies PyTorch, SciKit-Learn, Flower, Matplotlib, Next.js, Docker, Google Cloud, Vercel, Figma, Stripe, Clerk, SendGrid

EXPERIENCE

Front-end Fellow

UT Austin – Longhorn Developers

Jan 2025 – May 2025

Austin, Texas, United States

- Contributed to **UT Registration Plus**, a student-led Chrome extension adopted by **50,000+** students to facilitate course registration and scheduling.
- Collaborated through **GitHub** Issues, PRs, and Project Boards to resolve UX/UI issues and deliver new features aligned with design specifications and best software engineering practices.
- Prototyped a feature for direct course registration through the extension, including sign-in flow and data scraping logic.

Machine Learning Engineer Intern

Aramco – Aramco Research Center

Jun 2024 – Aug 2024

Thuwal, Saudi Arabia

- Enhanced the synthetic data for a **CNN** classification model by creating 3D renders in **Blender**, improving lighting, customizing textures, and creating **Python** scripts to streamline the process.
- Captured and integrated 360° **HDRi** images with the 3D renders to produce more realistic and diverse datasets, boosting the model accuracy by **20%**.
- Contributed to a project involving change detection of multi-spectral images by gathering datasets, testing models in **PyTorch**, and creating a flexible repository for testing different models.

Undergraduate Course Assistant

UT Austin – Software Engineering Class

Jan 2024 – May 2024

Austin, Texas, United States

- Mentored **6** student teams in developing full-stack websites, guiding them with project architecture design.
- Reviewed **+30** weekly student blogs, monitoring their progress, and reporting them to the professor.
- Conducted weekly office hours to assist students with understanding course concepts and fixing technical issues.

Research Intern

USC Viterbi School of Engineering – Data Science Lab

Jun 2022 – Aug 2022

Los Angeles, California, United States

- Implemented the Canonical Polyadic (CP) Tensor Decomposition algorithm using the Tensor Algebra Compiler library.
- Ran the CP algorithm on arbitrary data, compressing **+90%** of the data while maintaining its statistical significance.
- Presented the CP algorithm and the experiment results in a department-wise symposium.

PROJECTS

Federated Learning With Byzantine Clients Tolerance | Python, Flower, PyTorch, Matplotlib

Present

- Building and evaluating a Federated Learning framework using **Flower** to handle Byzantine (malicious or unreliable) clients in real-world distributed environments.
- Implementing an ML-based aggregator that applies **LSTM** techniques for anomaly detection of Byzantine clients.
- Running the experiment on KAUST's **CoLEXT** testbed to benchmark the performance under heterogeneous clients.

The Word Engineer | Python, Flask API, React, IBM Watson API | [GitHub.com/Abdomash/allam-challenge](https://github.com/Abdomash/allam-challenge)

Nov 2024

- Competed in a competition to develop enhancements for ALLaM, a new Arabic-focused large language model by **SDAIA**.
- Enhanced ALLaM in Arabic poetry generation by using a semi-hardcoded Poem Analyzer to evaluate linguistic accuracy.
- Developed a **trial-and-error** mechanism to let the model iteratively generate poems and retry upon detecting errors.
- Applied **chain-of-thought** techniques, allowing the model to create a structured poetic plan before generating verses, enhancing coherence and quality.