

Gauhar Assanbay

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EDUCATION

Mohamed bin Zayed University of Artificial Intelligence (MBZUAI)

Bachelor of Science in Artificial Intelligence

Abu Dhabi, UAE

Aug 2026 – Present

TECHNICAL SKILLS

Languages: C++, Python, C, Dart (Flutter), JavaScript (React, Next.js), SQL

ML & Data: NumPy, pandas, scikit-learn, matplotlib, LangChain, OpenAI API

Backend & Infra: FastAPI, Flask, Docker, Linux (Ubuntu), Git

Databases: PostgreSQL, Firebase, MongoDB

Coursework: Calculus, Linear Algebra, Discrete Mathematics, Data Structures & Algorithms

PROJECTS

Scalar Autograd Engine | C++

Jun 2026 – Jul 2026

- Implemented a minimal scalar automatic differentiation engine from scratch with dynamic computation graphs.
- Engineered forward and backward passes for key operations, including addition, multiplication, power, ReLU, and sigmoid.
- Designed reverse-mode automatic differentiation tracking operations via a topologically sorted Directed Acyclic Graph (DAG).
- Utilized engine to train small-scale Multi-Layer Perceptrons (MLPs); verified gradient accuracy against finite-difference numerical approximations.

CHIP-8 Emulator | C++, SDL2

May 2026 – Jun 2026

- Implemented a full CHIP-8 interpreter in C++ covering all 35 opcodes, including draw, subroutine, and skip instructions.
- Built fetch-decode-execute cycle with correct byte-addressable memory layout and 16-register file.
- Integrated SDL2 for real-time display rendering and keyboard input; runs classic ROMs at correct timing.

SpeakUp – Speech Disability Assistance | Python, FastAPI, Docker, Hetzner

Oct 2025 – Apr 2026

- Deployed speech-to-text and text-to-speech models on a Hetzner server for real-time accessibility.
- Built a containerized ML inference pipeline with FastAPI for audio streaming and model serving.
- Designed backend services handling concurrent audio processing and low-latency response generation.

Qolshatyr – Women Safety App | Flutter, Firebase, Twilio, Google Maps API

Mar 2024 – Dec 2024

- Developed a scalable women safety app supporting localization and emergency automation.
- Integrated Firebase Auth, Cloud Storage, and Google Maps API for route tracking and SOS detection.
- Implemented Twilio and Telegram API for emergency alerts with real-time location sharing.
- Featured in a national tech magazine with 300K+ monthly readers.

EXPERIENCE

Flutter Developer

Apr 2025 – Jul 2025

Mozz.kz

Remote, Kazakhstan

- Designed and implemented modular Flutter architecture utilizing Riverpod and Provider for reactive state management.
- Developed asynchronous data flows and local storage strategies to enable smooth offline caching mechanisms.
- Optimized code structure and release configurations for rapid deployment pipelines on the Google Play platform.

Web Development Intern

Jun 2024 – Aug 2024

Predictive Analytics for Science (PAfoS.AI)

Almaty, Kazakhstan

- Developed an interactive data visualization dashboard monitoring performance and interaction metrics for a medical AI chatbot.
- Built responsive frontend components in Next.js integrated with Plotly charts for real-time data analysis.
- Designed secure backend routes with Flask to seamlessly fetch and stream user logs from Firebase.

Student Developer

Jun 2023 – Aug 2023

nFactorial Incubator

Almaty, Kazakhstan

- Selected as one of 75 participants from 4,100+ applicants for a competitive full-tuition grant (\$1,000).
- Developed *Aity's Battle*, a generative AI web app that attracted 1,000+ users within weeks of launch.
- Built backend with LangChain, FastAPI, and MongoDB; integrated with a Next.js frontend.

LANGUAGES

English (Fluent), Kazakh (Native), Russian (Fluent), German (Upper-Intermediate)