

DINMUKHAMED ALBEK

Astana, Kazakhstan

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EDUCATION

Nazarbayev University

Aug 2022 – June 2026

Bachelor of Science, Computer Science

Astana, Kazakhstan

- Awarded a full scholarship and stipend by the government per entrance exam results
- Relevant Coursework: Performance and Data Structures, Computer Systems & Organization, Theory of Computation, Algorithms, Microcontrollers, Software Engineering, Database Systems, Artificial Intelligence

EXPERIENCE

Institute of Smart Systems and Artificial Intelligence

Jun 2024 - Sep 2024

Research Assistant

Astana, Kazakhstan

- Developed real-time speech recognition and synthesis module, reducing speech lag by optimizing response times using **Vosk(ASR)**
- Improved system efficiency, cutting response times from **1.49** to **0.99** seconds (**34% improvement**) through **asynchronous handling** and **parallel processing**
- Developed a real-time **speech interruption system** by running ASR and keyboard input in **parallel threads**, enabling interruption through detected keywords or user input.
- Designed a **multilingual machine translation pipeline**, integrating Kazakh-English translation using the Tilmash API and LLM
- **Technologies:** Python3, FastAPI, threading, asyncio, LLama3, GPT, KazLLM, Conda, Vosk, PiperTTS, TCP Sockets, requests

nFactorial Incubator

June 2023 - Aug 2023

Software Engineering Trainee

Almaty, Kazakhstan

- Selected as one of **75** top students among **4500+** applicants accross Kazakhstan (**Top 1.7%**).
- Developed personal project and integrated **Large Language Model (LLM)** into it.
- Developed secure **FastAPI** endpoints for **CRUD** operations on objects in a MongoDB database.
- **Technologies:** Python, Streamlit, FastAPI, MongoDB, Matplotlib, Docker

PROJECTS

Shanyrak — FastAPI, SQLAlchemy, Alembic, Pydantic, SQLite, Poetry

April 2024

- Developed a robust real estate **RESTful API**, facilitating property listings, user registration, and authentication.
- Incorporated **JWT** authentication to establish a secure user session environment and protected routes.
- Utilized **Pydantic** for data validation and serialization, bolstering API reliability.
- Utilized **Alembic** for streamlined database schema migrations and version control.
- Implemented customizable search capabilities with filters and pagination.
- Link: <https://github.com/dimalbek/Shanyrak>

Math Sensei — Python3, Streamlit, GPT API, Wolfram Alpha API, Matplotlib, MongoDB, Docker

July 2023

- Built a website with **generative AI** and **Wolfram Alpha** integration that solves math problems.
- Integrated **Matplotlib** to enhance visual representation by rendering text in LaTeX format.
- Resolved deployment issue by containerizing with **Docker**.
- Integrated **MongoDB** to efficiently track the history of user requests and web application responses.
- Successfully deployed the website with **400+** users that was published on **Forbes.kz**. (**Link to Article**)
- Link to code: <https://github.com/dimalbek/MathSensei>
- Link to video demonstration: **VIDEO**

TECHNICAL SKILLS

Languages: Python, C++

Technologies/Frameworks: FastAPI, Django, Streamlit, HTML/CSS

Databases: SQLite, PostgreSQL, MongoDB

Developer tools: Git, SQLAlchemy, Alembic, Pydantic, Docker, Poetry, Conda, Matplotlib, Cookies, Linux, threading, asyncio