Nurzhan Abdrassilov

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Education

University of California - Berkeley Aug. 2022 – May 2026

BA in Computer Science *Cumulative GPA: 3.5/4.0*

- **Relevant Coursework**: **CS189** Introduction to Machine Learning, **CS162** Operating Systems and System Programming, **CS161** Computer Security, **Data100** Principles & Techniques of Data Science, **Math54** Linear Algebra and Differential Equations, **CS70** Discrete Mathematics and Probability, **CS61A** Structure and Interpretation of Computer Programs, **CS61B** Data Structures and Algorithms, **CS61C** Great Ideas of Computer Architecture (Machine Structures), **CS188** Introduction to Artificial Intelligence, **CS170** Efficient Algorithms and Intractable Problems

Skills

- **Programming**: C, Java, Python, C++, Go, RISC-V, HTML, CSS, JavaScript, Scheme, SQL, Typescript
- **Other**: Node.js, React, Supabase DB, Valgrind, Logisim, Git, Vim, Docker, Jupyter Notebook, GDB

Projects and Experience

PintOS Operating System — *C, Kernel Programming*

- Engineered a fully functional single-core OS (PintOS) in C, including comprehensive design documentation
- Developed interrupt handling, including 27 system calls, enabling context switching and service for threads
- Built robust multithreading functionality with dynamic stack allocation, using various synchronization primitives including locks, semaphores, and condition variables, implemented from scratch
- Designed an efficient OS scheduler supporting FIFO, Round Robin, and Strict Priority Scheduling techniques, enabling synchronous thread execution on a single CPU core

Secure File Sharing System — *Go, Cryptography*

- Designed and implemented a secure file sharing system using cryptographic library functions, ensuring user authentication, file storage, and secure file sharing in the presence of potential attackers.
- Developed and integrated 8 core functions from scratch to support file operations, focusing on both functionality and security.

AIna — *Typescript, Express.js, MongoDB Atlas, Fullstack Engineering*

- Developed an AI-driven accessibility tool that analyzes website content, including images, text, and interactive elements—to detect compliance issues and generate actionable recommendations.
- Integrated advanced machine learning techniques to provide real-time feedback, assisting developers in aligning with ADA standards and enhancing digital inclusivity.

ClubHub — *Typescript, React, Supabase DB*

- Built a fully functioning full-stack web app in a team of 4 working as a part of CalHacks 10.0 Hackathon.
- The project allows users to browse, subscribe for updates, apply and rate clubs at UC Berkeley.

2D Game Engine — *Java, Algorithms, OOP*

- Implemented a 2D world generator in Java using procedural generation techniques, creating unique, unpredictable, and scalable worlds of any size and complexity.
- Designed interactive features for the 2D environment, enabling users to perform various actions, including movement, username customization, state saving/loading, and access to specific rooms upon reaching designated positions.

Extracurricular

Event Planning Committee of Central Asian Student Association at Berkeley

- Organized large-scale club events and executed event promotion initiatives, contributing to increased community engagement and student participation.

Event Operation Assistant at Berkeley Event Services

- Managed the successful execution of over 50 events, collaborating with clients to understand their needs and working with A/V to ensure a seamless experience for all attendees.