Ata Altyyev

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Education

University of California, San Diego La Jolla, CA

Bachelor of Science, Mathematics and Computer Science, GPA: 3.6 *Expected January 2024*

- **Relevant Coursework:**
  Computer Graphics, Advanced Data Structures and Algorithms, Systems Programming (ARMv8 Assembly), Digital Systems/RTL design, Computation Theory, Mathematical Logic, Computability, Algebraic Combinatorics.
- **Self-taught:**
  Kernighan & Ritchie, The C Programming Language
  Anderson and Dahlin, Operating Systems - Principles & Practice.

Work Experience

University Research - Embedded Systems & Tiny ML September 2022 – Present

University of California, San Diego *San Diego, California*

- The research in ultra-low power embedded systems of a very small area that perform edge computations in ML models of size smaller than 2 MB.
- Trained Fashion MNIST dataset via CNN classifier, which later upgraded to a separable CNN. Optimized the size of the model by pruning and quantizing. Instruments used: TensorFlow, Keras, Python.

Projects

Planner | *Web-application* June 2022 – Aug 2022

- Planner/Calendar/Notepad application. Designed as a web app but will be ported on android. The structure is User-Task interaction. Task modules communicate with user modules through binded UserId's, which allows to store multiple users with their private tasks.
- Wrote the backing code with Golang due to the use of the GORM library and use of concurrency with goroutines. Features built: registration, login, sort and search, deadline counting, email verification, authentication.
- Packaged this program into the docker container for its easy portability.
- Stored data in MySQL tables. Cached and encrypted the data with Redis and JWT respectively.
- Frontend was implemented with the use of VueJS, Nuxt.js, and Vuetify.
- Group Project: backend - *Ata Altyyev*(me), frontend - *Boris Ryabov*.
  https://github.com/ataha322/planner.xyi https://github.com/dzodkin33/planner-front

Rendering | *Real time rendered graphics* August 2022

- My learning of OpenGL, guided project. Implemented a moving camera, randomly generated buildings, fog, built a texture cube. Used C++, SFML, and OpenGL.
- Technical significancies lied in bitwise operations and geometry calculations.
- https://github.com/ataha322/opengl-render-city

Gravity box | *2D Gravity simulation* July 2022

- 2D planet gravity simulation. Moon rotates around its planet where planet is a movable object to demostrate changes in inertial and accelerated frames.
- Two key objects were built: planet and its moon. Computations align with expectations for constant and accelerated motions of gravitational objects.
- Used C++ and SFML library.
- https://github.com/ataha322/newtonBox

Technical Skills

Languages: C/C++, , ARM Assembly, Golang, Java, Python, Pascal.
Libraries & API: Redis, Gorm(MySQL), OpenGL, SFML, Fiber, JWT, Stripe.
Developer Tools: Docker, GDB, Valgrind, Linux, Git, bash & make scripts, RaspberryPi (C-code, ARM-code), LaTeX.
Skills: ASM reverse engineering, Golang TDD, Matlab/Numpy.
Miscellaneous: Burnt serial programmer by connecting two power sources, DVD-like bouncing screensaver.