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** :
  Object-Oriented Programming, Advanced Data Structures, Algorithms, Systems Programming (ARMv8 Assembly), Digital Systems/RTL design, Theory of Computations (Finite Automatons and Turing Machines), Linear Algebra, Mathematical Logic, Abstract Algebra, Combinatorics, Real Analysis, Software Tools, Relativity and Quantum Mechanics.
- **My Objective:** Embedded Software, Systems Software, Low-level Programming.

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 of several kilobytes.
- The main challenge is to accommodate the resources of a microcontroller for the model to run more effectively. This includes: hardware acceleration, network systems, benchmarking, model compression, learning algorithms.

Projects

Rendering | *Real time rendered graphics* August 2022

- Real-time rendered graphics using C++, SFML, and OpenGL.
- This is a part of my learning of OpenGL, guided project. Implemented a moving camera, randomly generated buildings, fog, built a texture cube.
- Technical significancies lied in bitwise operations and geometry calculations.
- https://github.com/ataha322/opengl-render-city

Newton's box | *2D Gravity simulation* July 2022

- 2D planet gravity simulation. The moon rotates around its planet where the planet is a movable object to demonstrate changes in inertial and accelerated frames.
- Used C++ and SFML library to implement two key objects: planet and its moon. Gravity calculations are made in the moon object, with the planet object passed in. The planet is movable, the simulation is resettable, and window frames are adjoint.
- https://github.com/ataha322/newtonBox

Planner.xyi | *Web-application* June 2022 – Present

- Planner/Calendar/Notepad application. Initially implemented as a web app but will be ported to android. The structure is simple: User-Task interaction. Task modules communicate with user modules through bound UserId's, which allows to store multiple users with their private tasks. Features implemented: registration, login, sort and search, deadline counting, email verification, authentication.
- Wrote the backing code with Golang due to the use of the GORM library and use of concurrency with goroutines.
- 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

Technical Skills

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