Ata Altyyev

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Education

University of California, San Diego La Jolla, CA

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

- **Relevant Coursework** :
  Advanced Data Structures and Algorithms, Systems Programming (ARMv8 Assembly), Digital Systems/RTL design, Theory of Computations (Finite Automatons and Turing Machines), 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 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, 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. Moon rotates around its planet where planet is a movable object to demostrate 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 planet object passed in. Planet is movable, simulation is resettable, window frames are adjoint.
- https://github.com/ataha322/newtonBox

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

- Planner/Calendar/Notepad application. Initially implemented as a web app but will be ported on android. The structure is simple: User-Task interaction. Task modules communicate with user modules through binded 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++, 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: Object-Oriented Programming, ASM reverse engineering, Test-Driven Development, Matlab/Numpy
Miscellaneous: Burnt serial programmer by connecting two power sources, DVD-like bouncing screensaver