Nikita Kulakov

+7 924 330 6869 github.com/zubrailx linkedin.com/nikita-kulakov-8a21b7203 nv1kulakov@gmail.com

Education

University ITMO June 2024
Bachelor of Informatics and Computer Engineering *Current GPA: 3.93/4.00*

Relevant Coursework

Grades: Exclusively A's, completed courses
Courses: Functional Programming in Haskell (Part I, II), Mathematic Logic, Computer Vision, Image Processing, Machine Learning and Data Analysis, Applied Statistics, Embedded Systems, Digital Circuitry

Skills

Languages: C/C++, Haskell, Python, Lua, Golang, Rust, Verilog, AMD64 Assembly, JavaScript, SQL, LaTeX
Tools: Git/GitHub, Linux, Bash/Zsh, Makefile, CMake, Conan, Flex, Bison, gRPC, Protobuf, REST, Node.js, PostgreSQL, MongoDB, Docker, Unit, CI/CD, Screen/Tmux, Vim, VS Code, Vivado IDE

Projects

IoT World Simulation | *C++, CMake, Conan, Python, gRPC, GTest, Protobuf, Docker, Git* May 2023 - June 2023
- Simulated real world for data collection devices by realizing algorithms for lighting, temperature, air movement, obstacle-aware wireless network.
- Implemented asynchronous multi-threaded application operation using mutexes, callbacks, and queues.
- Created several kinds of virtual devices that can collect data from the simulation and send it to the data lake.
- Performed exchanges between simulation and virtual devices using single calls and streams using gRPC.

Interactive Buffer LRU | *Verilog, Vivado IDE* April 2023
- Added possibility to change the program operation mode using exclusively double claps.
- Converted data from PDM microphone interface and visualized amplitude on LED.

Academic Relational DB | *C/C++, Bison, Flex, Boost, gRPC, CTest, Protobuf, Cmake, Bash, Git* January 2023
- Implemented a C relational database supporting insert, delete for $O(1)$, search for $O(n)$ operations.
- Added an allocator allowing to reuse free partitions in the DBMS data file.
- Introduced selection using nested JOINs with conditional nested operators, and standardized the implementation of new conditional operators.
- Added processing of syntax and semantic errors with description of reasons.

ALU CPU | *Python, Coverage, Mypy, Pylint, Pytest, CI/CD, Bash, Git* December 2022
- Simulated the operation of a stack processor that fetches instructions and changes the state of register cells, memory and I/O ports.
- Implemented the assembler translator into processor instructions in accordance with ISA.
- Tested the correctness of the translator and processor simulator using CI/CD on GitHub and GitLab.

Experience

Tinkoff Invest Robot Contest | *Backend Developer, DevOps* May 2022
- Developed a multi-user Java application that allows active user accounts to analyze quotes of traded stocks and buy them according to a specified algorithm at a given periodicity.
- Implemented Spring Security to secure user data API access keys and trading logs on user account.
- Configured Docker containers for frontend and backend deployment, added Nginx.

Ovision Hack Dev Track | *Frontend Developer* April 2022
- Developed a one-page JavaScript web application using React and Effector that reads an image from a user's camera and sends it to a server and visializes facial landmarks on the it.
- Implemented cropping of the original image using JS Tensorflow to reduce network and server load.