Dunaitsev Alexander

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EDUCATION

Bauman Moscow State Technical University **09.2019 – 06.2023**
*Bachelor "Computer-aided design systems" - **CGPA - 4.65*** *Moscow, Russia*

ADDITIONAL EDUCATION

Course "Prepatory program C/C++" Technopark BMSTU 02.2020 – 06.2020

Course "Linux system administration" Technopark BMSTU 02.2020 – 06.2020

Course "Algorithms and data structures" VK Education 09.2021 – 12.2021

Course "System architect" VK Education 02.2022 – 06.2023

PROFESSIONAL EXPERIENCE

Sber Robotics Laboratory | Intern software developer 05.2022 - ...

- Developed firmwares for ESP32 series SoC microcontrollers using the ESP-IDF framework.
- Developed a software architecture and implemented code of firmware for ESP32, which allows convenient use of the microcontroller's Wi-Fi module. Added the ability to send commands to the controller through the serial port in JSON format.
- Researched the problem of WI-FI connection stability in case of high noise in 2.4 GHz band. Proposed solutions to the researched issue from the point of view of software and from the point of view of hardware.
- Implemented a wireless mesh network using ESP32 controllers and tested it, as one of possible solutions for solving problem of the stability of connecting controllers to a Wi-Fi network.

PROJECTS

AES algorithm implementation | C++, GitHub Actions, GTest, CMake **01.2021**

- Created C++ library that implements AES (according to FIPS 197, AES is based on the Rijndael symmetric cipher algorithm).
- https://github.com/dunaitseva/AES

Web-application "Hospital" | Python, Flask, HTML, CSS, Bootstrap, MySQL **09.2021**

- As a part of the course work designed web application. Created REST API for hospital management system, using the MVC design pattern.
- https://github.com/dunaitseva/course_project_infosys_bmstu

Plate thermal conductivity solver | C++, CMake, gnuplot, ANSYS **05.2022**

- Created library that provides finite difference method for solving non-stationary heat equation for metal plates with arbitrary geometry and boundary conditions.
- Developed classes for rendering animation of plate heating.
- https://github.com/dunaitseva/finite-diff-method

SKILLS

Programming languages: C++, C, Python, Bash, SQL, LaTeX
Technologies/Frameworks: STL, Boost, GTest, CMake, Linux, Flask, Git, GitHub Actions, HTML, CSS, Bootstrap

ADDITION

- Test writing experience.
- CI usage experience.
- Used dynamic (valgrind, sanitizers) and static (cpplint, cppcheck, fbinfer, clang-tidy, etc.) code analysis tools.
- Math experience: linear algebra, statistics, optimization methods. Researched and implemented numerical methods algorithms.
- General engineering skills. CAD/CAM systems experience (Siemens NX, Autodesk Inventor).