Vladimir Prokhorov

Contact

prokhorov.va@phystech.edu
github.com/ProValdi
linkedin.com/in/provaldi
+7(915)0249633

Languages

English Intermediate

Skills

- C
- C++
- Linux
- STM32
- Verilog
- Java
- Python
- Git

Education

2018 – 2024

Department of Radio Engineering and Cybernetics,
Bachelor's + Master's degree in Applied Mathematics and Physics
Moscow Institute of Physics and Technology (MIPT) | Dolgoprudny, Russia
Department of Information Systems and Networks | Netcracker

Experience

2022-2024

Institute of Radio Engineering and Electronics named after V. A. Kotelnikov RAS
Scientific Researcher

- Developed an algorithm for controlling custom ultra-wideband modems on verilog for FPGA by splitting the program into a large number of smaller modules (all of thems coupled by one main FSM).
- Implemented finite state machines (Moore FSM, Mealy FSM), configured hardware-dependent Altera MAX 10 modules (PLL)
- Worked with Xilinx Spartan 6
- Developed algoritm for communication with FPGA in C for STM32
- Pretty good knowledge of STM32 (Including knowledge of general approach to other microcontrollers)

Jul 2021 – Now

Netcracker
Software Developer

- Developed from scratch scalable deployable Quarkus-based containerized custom Java microservice featuring job scheduling (using Quartz) with connection to existing kafka topic (maas) for business data patching (using REST clients of other microservices).
- Developed Spring-based Java microservice for assembling and converting business data via Jooq providing REST API for other dependent microservices of our project ecosystem.
- Stabilized CI environment (real-time bug-fixing)
- Developed new project's GraphQL API.
- Developed unit tests (Junit5) for lots of microservices inside our project ecosystem.
- Created safe business datafixes using SQL language (direct production data impact).

Volunteering

2018–2021

Experience As a Teacher

Taught electrodynamics and general physics for pupils at the summer ecological school.

Electrical Engineering Experience

During my studies at the MIPT, I took a course in digital signal processing (DSP). In terms of this course I did much work regarding signals processing (DFT and DTFT, STFT, IIR and FIR filters, LTI systems, Interpolation, etc.)

I have worked with many protocols such as SPI, I2C, UART, CAN, One-Wire, and also have extensive experience with timers, DMA, DAC, ADC. I have implemented a digital encoder algorithm for ultra-wideband noise-immune signal transmission, builded a flyback transformer with specified parameters, a mechanically scanned 3D display, a level detector based an accelerometer and many other small projects with interesting circuit solutions.

Computer Architecture Experience

I attended additional courses at my university that were aimed at a detailed analysis of the MIPS microarchitecture (Branch Prediction, Pipelining, Caches, etc.). Also, as part of this course, we completed practical tasks in the MIPS simulator. The course itself: https://mipt-ilab.github.io/mipt-mips/.

CISCO Computer Networks Experience

I have a good theoretical basis for understanding computer networks (dynamic routing protocols, OSI model levels, network architecture) with practical reinforcement by working in GNS3 and on real CISCO equipment.

Interests

Well, actually, this section is copied from another version of my main CV (Java-based work): Usually this section is much more about me, because I am not only a Java programmer, although my total experience in it is about 10 years (3 of which are in enterprise). I currently hold a part-time position as a junior researcher at the Kotelnikov's Research Institute as a part of my diploma work. Participated in the EnT Conference at Nov 2023 and later in 66th All-Russian Scientific Conference MIPT at Mar 2024. I develop PCB which can measure distance using UWB rays. During hole my conscious life I tend to create different electrical devices and for the last 8 years I have been improving my skills in creating those. Starting with the very basics and Arduino, ending with STM32 and digital processing using FPGAs. I also can share this experience:

2023, Nov
2024, Mar **En&T Conference**

A report was presented on the topic "Positioning using UWB signals" regarding scientific research financed by RSF (Russian Science Foundation) №23-29-00883

2021, Aug **Skoltech Summer Internship**

Developed independent load balancer for iPerf-based 5G speedtest service by working with my colleague using Python Flask server in combination with Docker containerization and Swagger API.

2020, Apr **NTI Hackathon**
Student stream, Wireless Technologies Profile

Won first place out of 8 teams in hackathon at NTI by working with five colleagues to develop a noise-resistant algotirthm for optimal data transmission over a noisy channel.