ALEKSEI DURNOV

Researcher & C/C++ Developer (Network Traffic Analysis)

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EDUCATION

Bachelor of Radio Engineering and Computer Technology

Moscow Institute of Physics and Technology

September 2020 - June 2024

- CGPA: 8.8/10.0 (4.91/5.0).
- Top 6 department graduates.
- Thesis topic: «Automatic generation of network protocol signatures». The developed signature generator and classifier were integrated as modules into a network traffic analysis system being developed at the ISP RAS.

Master of Radio Engineering and Computer Technology

Moscow Institute of Physics and Technology

September 2024 - Present

EXPERIENCE

Laboratory Assistant (Researcher & C/C++ Developer)

Institute for System Programming of the Russian Academy of Sciences

June 2022 – Present

- Developed module for RTSP protocol for DPI system «Protosphere».
- Conducted a comprehensive survey of protocol tunneling attacks.
- Conducted research work «Analysis of distorted sequences». Created verifiers with sequential memory access to such file formats as zip, 7z, rar, png, tiff, rtf for model checking system. Also realized many decoders: Deflate, LZMA, CCITT G3, LZW, RLE, ASCII Hex, ASCII85.

Student Mentor

Educational course «Introduction to Industrial Programming in C», MIPT, Lector: Ilya Dedinsky @ded32

September 2021 – Present

- The course covers base data structures and algorithms, final project – own programming language.
- Mentor a group size of 10-20 students each year.
- My page on wiki.mipt.

COURSES, PET PROJECTS

Machine Learning

MIPT course, Lector: K.V. Vorontsov

Github

Learned the basics of machine learning in regards to applying them to my future researches.

Development on GoLang

MIPT course

Github

The course is based on Yandex School of Data Analysis. Gitfame is the main project for the course.

Concurrency

MIPT course, Lector: Roman Lipovsky

The course introduces a new viewpoint on asynchronous programming. It covers synchronization primitives, schedulers, functional futures, fibers and coroutines.

SSH

Github

Own implementation of SSH. Supports symmetric and asymmetric encryption, multi-user connection, file copying, Reliable UDP protocol implementation.

JCC

Github

AOT compiler written for JPL. JPL is its own turing-complete programming language. Its main feature is that you can code a program in it both in hiragana and romaji (Latin).

TECHICAL SKILLS

Programming languages

C, C++, Go, asm x86-64, Python

Technologies

Linux API, Boost, MPI, OpenMP

Languages

English - intermediate

Other

Networks, machine learning, computational maths

INTERESTS

- Powerlifting
- Photography, student photo studio.