

# Deomid Ryabkov

Software Engineer, SRE, Tinkerer

Dublin, Ireland | +353 86 851 32 53 | [rojer@rojer.me](mailto:rojer@rojer.me) | <https://rojer.me/> | <https://github.com/rojer/>

## Overview

I wear two hats: systems and software engineer. I also dabble in hardware a bit.

As a software engineer, I have experience writing firmware for tiny things with kilobytes of memory to software deployed on thousands of machines, processing millions of requests per second.

C, C++, Go, Python and Shell are my day to day languages but I have working knowledge of JavaScript, Perl, various assemblers (x86, Xtensa, ARMv7).

I am also a seasoned UNIX (Linux, FreeBSD) systems engineer with experience implementing and running large scale data processing systems, frontends, backends, monitoring, etc.

I am self-motivating, driven and thorough. I consider ability to dive in and figure things out quickly my most important skill.

## Work experience

### Jul 2019 – Present : [Facebook](#) (Dublin, Ireland)

- 2020 – present: Production Engineer on the Bare Metal Systems team withing the Server Lifecycle, Production Engineering. Our team is responsible for system bootstrapping and provisioning infrastructure (DHCP, PXE/network boot, ram disks, etc). We also develop Open Source alternative to traditional UEFI BIOS based on [Linuxboot](#) (Linux boots Linux). My work centers around building Coreboot and testing the resulting images using Contest framework, as well as core development of Contest itself. Some of my work is in the open and can be found on GitHub under user [rojer9-fb](#).
- 2019 – 2020: Systems Engineer on the Platforms Integrations Engineering team within the Hardware Engineering organization. Our team's main focus is developing and deploying hardware health related tooling, we make sure Facebook's server fleet is in good health and new types of hardware entering service are well supported by the time they reach mass production.

### Apr 2015 – May 2019 : [Cesanta Software Ltd](#) (Dublin, Ireland)

I worked as a full-stack software engineer, from firmware to cloud backend and everything in between. I am the principal architect and author of [Mongoose OS](#), including drivers, VFS and network connectivity (FreeRTOS is used for scheudling).

mOS currently supports STMicro STM32 (F2, F4, F7), Espressif ESP8266, ESP32 and TI CC3200 and CC3220. Some of the things I did while working on it:

- Developed a flexible build system for apps and libraries (using Docker containers, GNU make, code generation in Go and Python)
- Wrote all the low level stuff, including early init and boot loader, exception handling (core dump and analysis tools), heap profiler
- Created a reliable and extensible over the air update mechanism (with fail-safe rollback)
- Optimized mbedTLS for much lower memory usage, added hardware crypto chip support
- Extensive networking protocol support, - TCP, UDP, HTTP, MQTT, SNMP, mDNS
- Support for all major IoT cloud providers: Amazon IoT, Azure IoT Hub, Google IoT Core, IBM Watson IoT
- Implemented drivers for hardware interfaces protocols (UART, SPI, I2C) on all the relevant platforms.

I was setting up a Docker registry once and needed an authentication server, so I [wrote one](#).

### **Jul 2006 – Mar 2015 : [Google](#) (Dublin, Ireland)**

I worked as a Sire Reliability Engineer for various teams, helping make sure various bits of Google's vast infrastructure are running smoothly. I also actively participated in design and development of the systems we were responsible for, focusing on reliability and performance. E.g. designed and implemented a critical component of a log processing system described in [this research paper](#) – the LogsEventStore.

My last position was Staff Reliability Engineer and a Team Lead.

### **Apr 2003 – Jul 2006 : [RosBusinessConsulting](#) (Moscow, Russia)**

I worked as a UNIX systems administrator, responsible for building and running the company's server infrastructure serving various projects – media projects, web hosting, etc.

I was responsible for provisioning, monitoring and reliability of the services.

## **Education**

2000 – 2006 – [Bauman Moscow State Technical University](#), Master, Information Security