

# Andrei Pavel

## curriculum vitae

Bucharest, Romania

+40 (0)748 220 135

andrei.pavel@cti.pub.ro

<https://github.com/andrei-pavel>



*true-stack on Linux with C++, D, Dart, Flutter, Go, Rust*

## technical skills

### advanced

**Android:** Java, Kotlin

**C:** C11, user-level, Arduino-dialect, OpenMP, MPI, pthread

**C++:** C++2a, casting, constness, dynamic loading, initialization order, inheritance, linkage, memory management, pointers, references, move semantics, preprocessor, synchronization in concurrent programming, templates, STL, boost, CUDA, OpenGL, autotools, meson, lcov, cppcheck, clang-tools

**Databases:** Cassandra, CouchDB, MSSQL, MariaDB, PostgreSQL, Oracle, Sybase, Sysrepo, sqlite

**Debugging:** cgdb, gdb, gdbgui, lldb, pdb, rr

**Go:** goroutines, reflection, BLE, ORMs, websockets, socket.io

**Operating systems:** Linux, bash, zsh, sed, ack, ripgrep, systemd, sys-v-init, vim

**Markup:** bpml, css, dtd, json, html, latex, markdown, xml, xsd, xsl, yang

**Protocols:** DHCP, DNS, TCP, UDP ip, iw, netconf, netopeer, nftables, ss, tc, tcpdump, Wireshark

**Version control:** git

**Virtualization:** Docker, docker-compose, Helm, Kubernetes, KVM, libvirt, virsh, QEMU

### intermediate

**C#:** Windows Forms

**D:** mixins, templates

**Flutter:** asynchrony, Dart, generics, isolates, mixins, Provider

**Rust:** affine types, linkage, macros, mutability, object lifetime, unsafety

## work experience (5 years, 5 months)

May 2016 —  
present  
(3 years, 11  
months)



**Software Engineer (formerly Junior C++ Developer), Qualitance, Romania.**

**Kea: open-source Linux DHCP server, C++, enhancements**

Open-source contributions to CESNET, ISC, Sysrepo (<https://github.com/andrei-pavel>).

- **Cassandra** ODM with multiple data sources
- **DHCPv6** features and features that help migrate to DHCPv6 e.g. lightweight-4o6 DHCP options
- **Robot Framework** automated system-testing
- live, persistent server reconfiguration
- integration with Sysrepo data source, NETCONF protocol, YANG model

**Runlock: smart-lock system, development & deployment & unit tests**

- BLE beacon advertising & GATT communication
- Electronic access control of doorlocks using Assa Abloy protocol
- REST

**Bullguard: antivirus backend for Mac OS X, C++, unit tests**

- scanning & quarantining of all file types
- updating the virus database

August 2014  
— October  
2015 (1 year,  
2 months)



#### Associate Software Engineer, Misys Financial Software, Romania.

- Development of treasury and capital markets software
  - Implemented support for Negative Rates in Money Market Rollover (3 months).
  - Maintenance and bug-solving (12 months).
  - Worked with services distributed using CORBA across Windows, UNIX, Solaris querying Oracle, MSSQL, Sybase databases.
  - Developed business objects (C++) and front-end functionality (C#) for Summit.

June 2013 —  
October 2013  
(3 months)



#### Software Engineering Intern, Intel®, Romania.

Application development and performance optimizations in the high performance computing  
Accomplishments:

- Contributed to the development of parallel applications designed to benchmark HPC devices.
- Benchmarked the Intel® XeonPhi™ coprocessor during the early days of it's release.
- Used C, C++, OpenMP, native threading, low level intrinsics for more fine grained optimizations, Intel® vTune™ Amplifier for profiling and characterization studies.

---

## portfolio

- 2019–2020 **Radio România Actualități Podcasts**, *Podcast app written in Dart with Flutter.*  
<https://play.google.com/store/apps/details?id=ro.radioromaniaactualitati.podcasts>
- 2018–2020 **bash-boilerplate**, *bootstrap your bash project with this handy boilerplate.*  
<https://github.com/andrei-pavel/bash-boilerplate>
- 2018–2019 **go-boilerplate**, *bootstrap your go project with this full-fledged boilerplate.*  
<https://github.com/andrei-pavel/go-boilerplate>
- 2014 **Rapunzel**, *simulation and rendering of hair in real time using GPGPU techniques.*  
<https://github.com/andrei-pavel/rapunzel>

---

## books

- currently reading **The way to Go**, by Ivo Balbaert.  
<https://www.goodreads.com/book/show/13553772-the-way-to-go>
- latest read **Seven Databases in Seven Weeks: A Guide to Modern Databases and the NoSQL Movement**, by Eric Redmond.  
<https://www.goodreads.com/book/show/25334471-optimizing-software-in-c>
- more on Goodreads <https://www.goodreads.com/user/show/63238106-andrei-pavel>.

---

## studies

- 2010–2014 **Bachelor of Computer Science**, Politehnica University of Bucharest, Romania.  
Automatic Control and Computer Science with major in Computer Systems Architecture
- Thesis **Simulation and rendering of hair in real time using GPGPU techniques**  
an algorithmic approach to the problem of real time simulation and rendering of hair in a highly-parallel multi-core environment