

Cristian PRUNDEANU

Experienced Software Engineer
Sw Architect and Technical Team Lead

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What I can do for you

- I have the experience and knowledge to lead a team and bring a project from idea stage all the way through planning, development, testing, global deployment and maintenance.
- I can develop desktop and embedded apps, and single source C++ projects for Android, Linux, iOS, MacOS and Windows. I'm able to develop top to bottom, from UI and web presence to internal architecture, to hardware interfacing.
- I can write tools and scripts, automate tasks, set up continuous builds and other development infrastructure, design and document workflows and APIs. I understand network communication and distributed data processing.

What I currently do

I am the Software Lead of the Qualcomm Atheros **embedded software** Smart Gateway team, the creators of StreamBoost – a next-gen QoS solution that runs on OpenWRT **Linux** and offers dynamic **network traffic** detection, classification and prioritization, data collection and cloud aggregation. We use **C** and Busybox Shell (**sh**) for the embedded code, **HTML/CSS/JavaScript** for the router's Web UI, and **bash**, **C/C++** and **Python** for offline/internal tools. Besides being the team's technical lead, I've been involved with all the StreamBoost development: I've architected and developed several of its components and the internal messaging system, designed and documented APIs (**REST API**) and release workflow, created tools for offline/internal use, designed the development workflow and repository structure, worked on the build system, CI and test automation. I am PoC for the StreamBoost integration at a system (OpenWRT) level.

What I love to work on

- Architect and develop C/C++ projects and tools; especially interested in cross-competency projects (IoT, robotics, AI, AR/VR, network communication/processing, automation, etc.)
- Scripting infrastructure and glue/tools in bash

Why should you pick me?

- **Motivation** - the greatest known factor to high productivity and output quality. My work is my passion, and this drives me further and better than anything else to deliver outstanding results.
- **Experience**. I started writing software while in 7th grade. 25+ years and a BSCS degree later, I haven't stopped learning and working to expand and improve my abilities. I have recent work practice in very relevant areas, and am comfortable with adjacent domains (hardware design, IT, UX, QA).
- **Attitude**. I believe in hard work and attention to detail. I don't shy away from any challenge. I love being a multiplier for the team (creating tools, automation, docs, etc.) and appreciate the value of solid teamwork, which makes individual contributions at all possible.

What else I can do

Software Engineering and Development

Operating Systems: Linux, Windows, OpenWRT-based Linux, IoT/RTOS

Languages: C/C++ (*expert*), Shell/bash (*expert*), Lua (*very good, would need to refresh*), HTML/JS (*very good*), Python (*won't starve*), SQL (*enough to get things done*), ASM (*very good*);

able to quickly learn any language, whether object oriented or low level/specialized

Tools, Libraries: Git, Qt, Gerrit/Jenkins, Redis, jQuery

Software Architecting and Project Management

Scripting, Build Automation, Continuous Integration

Embedded Systems, Real-Time Applications and Firmware

User Interface / User Experience Design

Web Design, Graphic Processing, Video Editing/SFX

Data Security in Internet Communications; Data Encryption

Small Database Design; Data Analysis and Distributed Data Processing

Server and System Administration (Windows and Linux)

Network Design and Administration

Hardware/PCB Prototyping (design, execution and testing)

Telecommuting Experience with International Teams

Fluent in English, German, Romanian; also French speaker

Related interests: Robotics, RC/unmanned aviation, 3D Vision, Augmented and Virtual Reality, AI learning

Education and Awards

Bachelor's Degree (BSCS), 2000

"Politehnica" University Timișoara, Romania

Major: Computer Science, Software and Hardware

Military training: Officer Rank, 2004

Officer Academy for Communications, IT and Electronic Warfare

Romanian NATO Army, Sibiu, Romania

English speaker's certificate, advanced level

Soros IHLS in Timișoara, Romania

German speaker's diploma (Sprachdiplom), highest level, 1995

Ministry of Culture Germany

Tested at graduation from the "N. Lenau" Theoretical German High School

Experience and Work History

- 09/2011 – present: **Staff Software Engineer, Software Lead.** Qualcomm Atheros, Austin, TX
(via M&A of Bigfoot Networks). Linux firmware/embedded development for next generation Intelligent Gateways with StreamBoost dynamic QoS and data collection, using OpenWRT-based Linux. Technical lead and mentor for the team. Architected and developed StreamBoost internal messaging and several user space components (master controller, service state machine, REST API backend, flow management, bandwidth measurement, data persistence) and a sample code framework to accelerate new component development. Contributed major improvements in performance, stability, UI, and release quality. Lead the full documentation effort for StreamBoost. Designed company-wide software development workflow and cross-team interactions. Implemented kernel mode RED queue and VD/DRR scheduler. Developed distributed data processing tools in Python using Map/Reduce on DDFS. Implemented a multiple-repo Linux-based build system with web management. Engineering POC for any StreamBoost related topics from several major router OEMs (DLink, NetGear, Zyxel, TPLink). Co-architected board farm used for automated testing (now adopted by software development teams across the company). Minor contributions to OpenWRT upstream. Worked with the Qualcomm Linux team to provide support and Linux kernel networking and driver code for partner IoT device development (like the Google WiFi meshed network product).
- 06/2009 – 09/2011: **Senior Software Engineer, Team Lead.** Bigfoot Networks, Austin, TX
Architected and developed main Windows application suite (using Visual C++ and Qt) to monitor and control the Linux-based RTOS running on the gaming NIC product line. Architect, Project/Team Lead for a successful standalone networking and performance monitoring application. Automated build process (Windows scripting and software), architected and engineered installers for main product line, device drivers and Windows services. Redesigned and implemented new revision control (using Git) and software repository infrastructure. Pioneered static link mode for Qt-based standalone tools. In charge of software maintenance and development for the entire Windows application line. Linux toolchain development for offline data processing.
- 09/2010 – 01/2011: **Senior Software Engineer, Consultant.** ClearOne, Austin, TX
Implemented software biquadratic filter for digital networked speakers, using C. Lua proof of concept for an authenticated Internet radio (vTuner) client.
- 04/2010 – 10/2010: **Senior Software Engineer, Consultant.** BroadQue, Austin, TX
Redesigned and implemented CoreCodec/Lua-based user interface foundation to improve and expand functionality and usability. Added offline (local media) UI functionality. Developed Lua-UI features.
- 09/2006 – 01/2009: **Senior Software Engineer.** NetStreams, Austin, TX
Designed and implemented the audio subsystem (hardware drivers, data streaming and processing, input-to-network and network-to-speaker audio data paths) for the IP Video flagship product line.
Redesigned the network synchronization module, with vast performance improvements. Added a debug and monitoring module to the system, to facilitate development and shorten its time. Contributed a template system for Lua-based integration of third party devices. Development for the system's networked graphical user interface.
- 12/2000 – 09/2006: **Software Architect, Design, Consulting.** Self Employed
Software projects in 3D graphics and architectural design (CAD), software security, hardware-based IP protection, data encryption, and communication. Responsible for project planning, quality specifications and resource management. Remotely maintained client's corporate network with Linux and Windows servers. Designed corporate web sites.

- 02/2002 – 08/2005: **Software Engineer, Network Administrator.** A-Soft SRL, Romania
(as part of *Saratoga Group Romania*) Continued the Linux/Network administrator position at Saratoga. Additionally, was assigned software projects for large clients such as Magnum Germany, Bosch, Voith and Volkswagen. Areas covered include industrial applications (sensor testing and monitoring), hardware interfacing, production cycle management and hardware component driver development.
- 10/1999 – 04/2001: **Software Engineer.** JF Polisoft SRL, Romania
Engineering software projects in the 3D animation/graphics field. Also responsible for software testing and quality assurance of the developed projects.
- 04/1997 – 02/2002: **Sr Linux & Network Administrator.** Saratoga Computer Networks, Romania
Set up and maintained Internet backbone and access points; set up the nation-wide first laser network link; handled escalated customer support; designed, developed and deployed Linux database and software projects, to improve customer handling, improve security and Windows-Linux network connectivity, and automate system administration/monitoring and billing cycle.
- 08/1995 – 07/2000: **Intern, Software Engineering.** "Politehnica" University Timișoara, Romania
Designed and implemented a windowed event-based UI system, to be used as a C++ library. Built a robotics subsystem to calculate possible moving paths based on environment mapping. Implemented the first version of an interactive OCR system used for handwriting. Architected and implemented a graphical network mapping tool supporting multiple device types and groups. Implemented a scheduling and management system for on-call staff distribution.
- 01/1991 – 07/1995: **Programmer, Contracting.** Schnell SRL, Romania
Created a sorting application for the management of small user databases. Worked on various hardware design projects (layout of electrical interconnections and PCB). Developed a character printer driver for Motorola 68K processor machines, to provide Romanian alphabet compatibility.

Projects and Hobbies

- Top 10% StackOverflow contributor - <http://stackoverflow.com/users/2245910>
- Hobby level experience with woodworking and 3D printing (I've built my own 3D printer from parts and successfully printed working, pre-assembled hinges, mechanical assemblies and various other objects)
- Developing a kids' game for learning math, which works on Windows, Linux, iOS, Android and Mac from a single code base
- Developing an innovative keyboard-less customer management system for the longest outdoor shooting range in the Waco area (customers check in and out using their driver license only)
- Developing a versatile RC auto pilot ecosystem designed from the ground up (including PCB layout and in-house production)
- Developing a cloud hybrid storage solution with end to end encryption and built in redundancy
- Developed multi-platform apps for stock trading (portfolio, ticker graphing, day trading calculations)