Alexandru Ardelean

Embedded SW/Linux Kernel Engineer

Contact details

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Location: Cluj-Napoca

About Me

Embedded software developer, primarily skilled in C, shell, some Python, some automation, and some various other topics.Contributor to various open-source projects (Linux kernel, OpenWrt, and other).

Github profie: https://github.com/commodo/

Linux kernel contributions: roughly 430+ authored (with various email addresses)

- https://github.com/torvalds/linux/commits?author=commodo   or
- git log --oneline --author="Alexandru Ardelean" | wc -l

More recently, I started doing Computer Vision with AI model training (YOLO, HRnet) and getting them to work on embedded devices.

Skill sets

C	15+ years	Python	4+ years
Embedded Development	15+ years	Linux	7+ years
C++	5+ years	Drivers	7+ years
Shell/Bash	7+ years	DevOps/CI Automation/Tooling	4+ years
Yocto	4+ years	Buildroot	5+ years
Computer Vision, AI Model Training AI Model Inference YOLO, HRnet	1+ years		

Professional Experience

May 2022 - Present

Contractor for Embedded/Linux projects
Role: Contractor
Company: Shruggie
Location: Cluj-Napoca

Clients I've had along this trip:
- MXT Creation – Create BSPs for Renesas RZ/V DRP AI SoC families (RZV2L, RZV2M(A))
    - Technologies used: Yocto, Python, Shell
- MXT Creation – Train and deploy AI Computer Vision models on Renesas RZ/V DRP AI SoC families
    - Technologies used: Python & C++ for apps, C for camera sensor drivers
- STIHL: features and performance improvements for the iMOW (lawn-mower robot) launched in 2023
    - Tecnologies used: C++ for apps
- Ateme: rework of a TS muxer library for a HW video encoder
    - Technologies used: C++
- Allegro DVT (through Deviqon Labs): continue work on emulator for HW IP designs
    - Technologies used: C++
- BrightGrove (consultancy group): develop platform for a new line of smart TVs (for a customer of BrightGrove)
    - Technologies used: Buildroot, Android, C/C++
- MathWorks (makers of Matlab/Simulink): kernel support for RF applications
    - Technologies used: C for Linux kernel drivers

March 2021 – February 2023

Deviqon Labs
Role: Senior Software Engineer
Location: Cluj-Napoca

Write software aimed at services for the streaming & television industry
Clients:
- Ateme (acquired Anevia): create and extend software for video/audio/TV streaming and DRM
    - Technologies used: C++
- Allegro DVT: create emulator for a HW IP designs (for video decoders)
    - Technologies used: C++

December 2017 – February 2021

Analog Devices Gmbh

Role: Linux Kernel Engineer
Location: Cluj-Napoca

Role includes:
- Work on Linux kernel drivers for Analog Devices parts (ADCs, DACs, accelerometers, IMUs)
- Work and enhancements (to the Linux kernel) to better support Analog Devices parts
- Continuously interact with Linux kernel community by submitting changes to the Linux kernel
- Internal code review for new changes being added to the Analog Devices kernel repository

Technlogies used:

- Xilinx Zynq 7 series: ZedBoard, ZC706, ZC702
- Xilinx ZynqMP series: ZCU102, ZU11EG
- Intel/Altera Arria10 SoC
- C for Linux kernel /baremetal drivers
- C++ for Scopy
- DeviceTree for configuring boards for the Linux OS

Links:
https://github.com/analogdevicesinc/linux/commits?author=commodo

https://patchwork.kernel.org/project/linux-iio/list/?submitter=178229

2016 - 2022

Co-maintainer of the mstpd package
Role: Co-maintainer
Location: Github

Co-maintain the mstpd package/code-base (Multiple Spanning Tree Daemon) with other developers

Technologies used: C for the whole thing

https://github.com/mstpd/mstpd/commits?author=commodo

2014 - Present

Open-source contributor to OpenWrt
Role: contributor
Location: Github / git.openwrt.org

OpenWrt is an embedded Linux distribution for routers.

Technologies used: Shell, Makefile, and C for drivers

Contributor of various patches to core OpenWrt.
https://github.com/openwrt/openwrt/commits?author=commodo

Maintainer of a few packages in the packages feed:
https://github.com/openwrt/packages/commits?author=commodo

January 2014 – December 2017

Ocedo / Riverbed Technology
Role: Embedded Software Engineer
Location: Cluj-Napoca

Riverbed acquired Ocedo (which was a small networking startup based in Karlsruhe Germany).

Develop and maintain software modules and drivers for network gateways, switches and access-points.

- Integration of 3G/4G connectivity in gateways
- Integration of Spanning Tree (STP) and Link-Layer Discovery (LLDP) protocols in switches
- Support for some Broadcom switch chips
- Internal code reviews

Tecnologies used: C for apps and Linux kernel drivers, Shell, Makefile, STP, LLDP, Jenkins

April 2013 – January 2014	**Betfair.com** Role: DevOps for internal tooling Location: Cluj-Napoca Maintenance & support for internal tools: Gitlab, Perforce, SVN, Jenkins, Atlassian (Confluence, JIRA, Fisheye), Fortify. Automation of deployment processes using various tools (Jenkins CI, Chef, Puppet).
November 2012 – April 2013	**EBS Romania (currently NTT Romania)** Role: Embedded Software Engineer for Automotive Location: Cluj-Napoca Technologies used: C for various SW modules Develop SW & documentation for Continental Automotive for various work on instrumentation clusters.
August 2011 - November 2012	**NSpyre Romania (currently Capgemini Romania)** Role: Software Engineer Location: Cluj-Napoca Technologies used: Python, numpy, scipy Write software modules & documentation for controlling highly complex industrial machines, for ASML (https://www.asml.com/en)
March 2007 – August 2011	**National Instruments Romania** Role: Software Engineer Location: Cluj-Napoca Technologies used: C for RTOS & drivers, ethernet, TCP/IP - Primarily worked on Pharlap (RTOS) - Write drivers for ethernet cards for PXI products for the Pharlap OS - Develop & maintain the TCP/IP stack on the Pharlap - Add advanced debugging features to Pharlap OS to better debug network issues - Maintain LabVIEW network primitives across Windows, MacOS, Linux, Pharlap and VxWorks operating systems

Education

2003 - 2008	**Technical University of Cluj-Napoca** Computer Science Department (English Section)
1999 - 2003	**"Mihai Eminescu" High School – Satu Mare** Mathematics and Informatics (English Section)