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**

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| 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**

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| **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](https://github.com/mstpd/mstpd/commits?author=commodo)  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](https://github.com/openwrt/openwrt/commits?author=commodo) / [git.openwrt.org](https://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](https://www.riverbed.com/) 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**

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| **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) |