Dr. Martin Peres

Linux kernel / X.Org developer

Employment

2019 – Now Intel Open Source Graphics Center: CI/Tooling architect implementing the vision of production-ready upstream drivers.

2017 – 2019 Intel Open Source Technology Center: Joined the kernel development team, but focused on improving the development and validation workflows. Primary developer of CI Bug Log.

2015 – 2016 Intel Open Source Technology Center: Co-implemented an OpenGL 4.4 / 4.5 extension in Mesa's i965. Ironed out the last DRI3 issues. Developped auto-bisector for performance/rendering/unit tests changes.

Skills

2010 – Now Linux Kernel Development:
- Nouveau: Contributed 100+ patches to implement thermal/power management for NV40 → NVE0.
- Intel: Reviewed 100+ in the DRM test suite (IGT), and 10 patches in drm/i915.

2010 – 2018 Reverse Engineering: Partially reverse-engineered thermal/power-related features. Wrote 350+ commits in Envytools, the primary repository for register/ISAs documentation and tools for NVIDIA.

2011 – Now FLOSS Community: Sat at the X.Org board of directors between 2013 – 2019; Organized two X.Org Developers conference (2014 and 2016); Gave 25+ talks at Open Source conferences; Mentored 6 times in the Google Summer of Code or X.Org's Endless Vacation of Code;

2008 – 2015 Security:
- OS: Designed and developed a mandatory access control system for graphical applications that dynamically changes the SELinux policy / firewall rules in order to react to a change in the user's current activity. Used in PIGA-OS (research OS) winner of the Sec&SI security challenge by the French Research Agency.
- Network: Designed mitigations against (un)intentional jamming to improve network availability of hardware-based or software-defined radios within the legal ISM bands.
- Linux Graphics stack: Highlighted the different security issues at XDC 2012 (LWN Article) and proposed solutions. I wrote a follow up article on my blog some years later summarizing the current discussions, and co-developed a PoC called Wayland Security Modules that aims at providing useable security.

2013 – 2015 Software-defined Radios: Designed protocols and software architecture to create infrastructure-less communications over a wide area and to improve the network's response to (un)intentional jamming. Created wireless interfaces that could change PHY parameters on the fly without pre-synchronization.

2006 – Now Electronics: Studied digital electronics in High School and has been doing it as a hobby since then. Worked with Arduinos, TI's CC430, and ARM-based SBCs. Built a physical frontend to a music player, and a Web-based interface to power up/down computers using an Raspberry Pi and a custom board designed in Kicad. Co-wrote a Qt-based Arduino IDE.

Education

2011 – 2014 Ph.D. Student at LaBRI, Bordeaux (FR): Researched autonomic computing, security, power & RF spectrum management to design an architecture for local-and-distributed entirely-self-optimising wireless systems.

2008 – 2011 ENSI de Bourges (FR): Studied system/network/hardware security, compilation and system administration. Specialised in « Security of ubiquitous systems ». Researched desktop PC OS security for 2 years.

2006 – 2008 IUT d'informatique de Montpellier (FR): Graduated in IT and software engineering.

Languages

French	Native	
English	Cambridge's Certificate in Advanced English	*Work language at Intel*
Finnish	Basics	*B2-level, learnt at the University of Helsinki*
German	Basics	*Self-taught for 4 years, regular trips to Germany*

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Talks and articles: `publications.mupuf.org`

References

Intel

- Daniel Vetter, DRM Maintainer

Red Hat

- Ben Skeggs, Nouveau Maintainer

Publications and public talks

Complete list at `https://publications.mupuf.org`.