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Javier Martinez Canillas

Summary

I'm a software engineer with experience working on different layers of the Linux software stack, ranging from the kernel to user-space applications.

Also, I'm an open-source enthusiast that contributes to many open source projects specially the Linux kernel where I maintain a couple of components (https://www.openhub.net/accounts/martinezjavier).

Specialties

Software engineering, Linux user-space and kernel development, System integration, Packaging.

Education

2010 - 2011

Master of Science (M.Sc.), High Performance Computing - Universitat Autónoma de Barcelona, Bellaterra, Spain.

Thesis: *Including the Workload Effect in the Parallel Program Signature.*

Advisor: Prof. Emilio Luque.

2002 - 2008

Bachelor of Science (B.Sc.), Informatics Engineering - Catholic University "Nuestra Señora de la Asunción", Asunción, Paraguay.

Thesis: *A new approach to solve Multi-Objective Evolutionary Optimization Problems using Linear Genetic Programming.*

Advisor: Prof. Benjamín Barán.

Awards and Honors

PIF-UAB predoctoral scholarship for Master of Science studies at Universitat Autónoma de Barcelona.

Professional Experience

January 2012 - Present

Senior Software Engineer - Collabora (`http://www.collabora.co.uk`)

- Helped customers to upstream their Linux kernel platform support, work close to mainline and reduce their maintenance burden.
- Developed customer specific Linux distributions using the OpenEmbedded/BitBake build system and Debian/Ubuntu derivatives using Debian packaging and the Open Build Service (OBS).
- Improved the Desktop Bus (D-Bus) inter-process communication system performance by developing a new socket address family (AF_BUS) for multicast communications on Linux.

Repository: `http://cgit.collabora.com/git/user/javier`

September 2011 - January 2012

Linux Kernel Engineer - ISEE (`http://www.isee.biz`): Embedded systems manufacturer.

- Linux kernel device drivers and bootloader (X-loader and U-boot) development for custom ARM OMAP3 (Cortex-A8) based boards.

Repository: `http://git.igep.es/`

October 2010 - August 2011

M.Sc. Student, Professor and Researcher - Computer Architecture and Operating System department, Universitat Autónoma de Barcelona.

- Design and implementation of a parallel application performance analysis and prediction tool.
- Doing research to improve the tool accuracy.
- Teaching assistant for the course "Electronic systems design based on microcontrollers".

July 2009 - September 2010

Professor and Researcher - Computer Engineering, Polytechnic Faculty, National University of Asunción.

- Updated the Linux Device Drivers 3 book examples to compile and run with newer kernels. So students can develop their own virtual device drivers based in those examples:

  Repository: `https://github.com/martinezjavier/ldd3`
- Developed a sniffer as a kernel module using the kernel's protocol handler (*struct packet_type*) kernel infrastructure to help students understand packet reception.

- Developed a firewall as a kernel module using netfilter register hooks API (*struct nf_hook_ops*) to help students understand data structures used by the kernel to store frames (*struct sk_buff*) and headers (*struct iphdr, struct tcphdr, struct ethhdr*).

Open source contributions

May 2010 - Present

Kernel hacker - Linux kernel (`http://git.kernel.org`)

Mainline maintainer of the OMAP3 IGEP embedded board family and the TI OMAP GPIO driver.

`https://www.openhub.net/accounts/martinezjavier`

Publications in Journals and Conferences

[1] Javier Martinez Canillas. *Kbuild: the Linux Kernel Build System*, The Linux Journal, 2012.

[2] Martinez Canillas, J. and Wong, A. and Rexachs, D. and Luque, E. *Including the Workload Effect in the Parallel Program Signature*. High Performance Computing and Communications (HPCC), 2011 IEEE International Conference on. September, 2011, Banff, Canada.

[3] Martinez Canillas, J. and Wong, A. and Rexachs, D. and Luque, E. *Predicting Parallel Applications Performance using Signatures: the Workload Effect*. Computer Systems and Applications (AICCSA), 2011 IEEE/ACS International Conference on. December, 2011, Sharm El-Sheikh, Egypt.

[4] R. Sánchez, J. Martinez, B. Barán. *Macro-Economic Time-Series Forecasting Using Linear Genetic Programming*, 11^{th} Joint Conference on Information Sciences, Dec 15-20, 2008, China.

[5] Javier Martinez Canillas, Roberto Sánchez, Benjamín Barán. *Estimation Models Generation using Linear Genetic Programming*. CLEI Electronic Journal Volume 12 Number 3, December 2009. Regular Issue and Special Issue of Best Papers presented at CLEI 2008, Santa Fe, Argentina.