

Juri Lelli

SENIOR SOFTWARE ENGINEER · KERNEL HACKER

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Summary

Working on operating system support for next-generation ARM technology in the **OS power management** team at ARM: **Linux kernel** support for big.LITTLE, including **kernel scheduler** support and existing Linux power management frameworks. **Maintainer** of the **SCHED_DEADLINE Linux scheduling class**. Well known in the Linux kernel development community with 5+ years of experience.

Work Experience

ARM Ltd.

SENIOR SOFTWARE ENGINEER

Cambridge, UK

Jul. 2014 - PRESENT

- Operating system support for big.LITTLE and next-generation ARM technology.
- **Linux kernel** support and development for **scheduler and power management** frameworks.
- **Maintainer** of the **SCHED_DEADLINE Linux scheduling class**.
- Workload **power and performance analysis** (kernel level) on **Linux/Android**.
- Collaborated with the **Google Android kernel team** for the release of the **Pixel Android phone**.

Contributions within the EU Research Project “Java Platform for High-Performance and Real-Time Large Scale Data”

Pisa, IT

RESEARCHER

Jan. 2013 - Jul. 2014

- JUNIPER - FP7-ICT-2011.4.4 - Grant Agreement No. 318763 - <http://www.juniper-project.org/>
- Development and maintenance of the SCHED_DEADLINE scheduler for the Linux kernel.
- Implementation of the Multiprocessor Bandwidth Inheritance real-time synchronization protocol in Linux.

Contributions to the EU Research Project “Service Oriented Operating Systems”

Pisa, IT

RESEARCHER

Feb. 2011 - Jul. 2012

- SoOS - FP7-ICT-2009.8.1 - Grant Agreement No. 248465 - <http://www.soos-project.eu/>
- Contributions to deliverables: D3.4 “Protocols”, D4.4 “Execution Management”, D7.3.2 “Collaboration and Dissemination II”.
- Demo for 2nd year project review.

Retis Lab (Scuola Superiore Sant’Anna of Pisa)

Pisa, IT

RESEARCHER

Jan. 2011 - Apr. 2011

- **Linux kernel** developer.

Library of Veterinary Medicine (University of Pisa)

Pisa, IT

LIBRARIAN

Jun. 2009 - Nov. 2009

- Loan officer.

Faculty of Engineering (University of Pisa)

Pisa, IT

TUTOR

Feb. 2009 - May 2009

- Tutor of 1st year students.

Faculty of Engineering (University of Pisa)

Pisa, IT

LINUX/WINDOWS OPERATING SYSTEMS ANALYST/ADMINISTRATOR

Apr. 2007 - Jul. 2007

- Software/Hardware maintenance, systems configuration.

Admissions Office (University of Pisa)

Pisa, IT

ADMINISTRATIVE STAFF ASSISTANT

Nov. 2005 - Feb. 2006

- Filing clerk, students tutor.

Events & Talks

RT-Linux mini summit 2011

Prague, Czech Republic

ATTENDED

Oct. 2011

- Participated to the discussions.

7th Workshop on Operating Systems Platforms for Embedded Real-Time Applications (OSPRT11)

Porto, Portugal

PRESENTER

Jul. 2011

- Presented “An efficient and scalable implementation of global EDF in Linux”.

8th Workshop on Operating Systems Platforms for Embedded Real-Time Applications (OSPRT12)

Pisa, Italy

PRESENTER

Jul. 2012

- Presented "PRACTISE: a framework for PeRformance Analysis and Testing of real-time multicore SchEdulers for the Linux kernel".

Linux Plumbers Conference 2012

San Diego (CA), USA

PRESENTER

Sep. 2012

- Attended and presented at the scheduling micro-conf.

Embedded Linux Conference 2013

San Francisco (CA), USA

ATTENDED

Feb. 2013

- Participated to talks and discussions.

Linux Kernel Summit 2013

Edinburgh, UK

ATTENDED

Oct. 2013

- Participated to the discussions.

15th Real Time Linux Workshop (RTLWS15)

Lugano, Switzerland

PRESENTER

Oct. 2013

- Presented "Design and Implementation of the Multiprocessor Bandwidth Inheritance Protocol on Linux".

4th Annual International Conference on Energy Aware Computing Systems & Applications (ICEAC13)

Istanbul, Turkey

PRESENTER

Dec. 2013

- Presented "On the Energy-Aware Partitioning of Real-Time Tasks on Homogeneous Multi-Processor Systems".

Linux Plumbers Conference 2014

Düsseldorf, Germany

ATTENDED

Oct. 2014

- Attended and participated to RT, scheduling and power management micro-confs.

Linux Plumbers Conference 2015

Seattle, USA

PRESENTER

Aug. 2015

- Participated to scheduling and power management mirco-confs.
- Presented scheduler driven CPU frequency scaling solution.

Linaro Connect 2015 (SF015)

San Francisco, USA

ATTENDED

Sep. 2015

- Participated to scheduling and power management discussions and hacking sessions.
- Discussed the scheduler driven CPU frequency scaling solution and the Energy Aware Scheduling implementation.
- Participated to partners meetings.

Embedded Linux Conference 2015

San Diego, USA

PRESENTER

Apr. 2015

- Presented "SCHED_DEADLINE: a status update": Slides (<https://goo.gl/OVspul>).

Linaro Connect 2016 (BKK16)

Bangkok, Thailand

ATTENDED

Mar. 2016

- Participated to scheduling and power management discussions and hacking sessions.
- Discussed the Energy Aware Scheduling implementation.
- Participated to partners meetings.

Linaro Connect 2016 (LAS16)

Las Vegas, USA

PRESENTER

Sep. 2016

- Participated to scheduling and power management discussions and hacking sessions.
- Presented "Walkthrough of the EAS kernel adaptation to the Android Common Kernel": Slides/Video (<https://goo.gl/FXCdAX>).
- Participated to partners meetings.

Linux Plumbers Conference 2016

Santa Fe, USA

PRESENTER

Nov. 2016

- Participated to scheduling, power management and Android mirco-confs.
- Joint presentation with Google Android kernel team about work done to land the Energy Aware Scheduling solution on the Android Common Kernel.

Education

Scuola Superiore Sant'Anna

PHD IN COMPUTER ENGINEERING (INNOVATIVE TECHNOLOGIES, EMBEDDED SYSTEMS)

Pisa, Italy

Nov. 2010 - Sep. 2014

- **Quality of Service** control for soft real-time systems.
- Analysis, design and development of **multiprocessor real-time scheduling and synchronization** solutions.
- Design and development of **embedded and real-time systems**.
- Linux kernel **SCHED_DEADLINE patchset maintainer** (real-time deadline scheduling) - merged in mainline since Linux 3.14.

University of California at Santa Cruz - Sytems Research Group

RESEARCH SCHOLAR

Santa Cruz (CA), USA

Sep. 2012 - Mar. 2013

- Design and development of **real-time scheduling mechanisms** for the **Linux kernel**.

University of Pisa - Faculty of Computer Engineering

MASTER'S DEGREE IN COMPUTER ENGINEERING

Pisa, Italy

Mar. 2007 - Jun. 2010

- Thesis: "Design and Development of Deadline Based Scheduling Mechanisms for Multiprocessor Systems".

University of Pisa - Faculty of Computer Engineering

BACHELOR'S DEGREE IN COMPUTER ENGINEERING

Pisa, Italy

Sep. 2002 - Jun. 2006

- Thesis: "Concurrent C++ code generation from UML statecharts".

"G. Marconi" High School

SCIENTIFIC HIGH SCHOOL DEGREE

Grosseto, Italy

Sep. 1997 - Jul. 2002

- General scientific preparation.

Publications

JOURNALS

Incentive-based resource assignment and regulation for collaborative cloud services in community networks

Amin M Khan, Ümit C. Büyüksahin, Felix Freitag

Journal of Computer and System Sciences 81.8 (Dec. 2015) pp. 1479–1495. 2015

Cloud services in the Guifi.net community network

Mennan Selimi, Amin M Khan, Emmanouil Dimogerontakis, Felix Freitag, Roger Pueyo Centelles

Computer Networks 93.P2 (Dec. 2015) pp. 373–388. 2015

PEER-REVIEWED CONFERENCES & WORKSHOPS

Prototyping Incentive-Based Resource Assignment for Clouds in Community Networks

Amin M Khan, Umit Cavus Buyuksahin, Felix Freitag

28th IEEE International Conference on Advanced Information Networking and Applications (AINA 2014), 2014, Victoria, Canada

Skills

Programming	Python, Node.JS, C/C++, Scala, JAVA, OCaml, LaTeX
Web	Django, Express, Redux, React, HTML5, LESS, SASS
Languages	Korean, English, Japanese, Chinese