

Europass Curriculum Vitae

Personal information

Surname(s) / First name(s)

Address(es)

Telephone(s)

Email(s)

Nationality(-ies)

Date of birth

Checconi Fabio

Loc. Cura Nuova, 70, Massa Marittima (GR)

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fabio@gandalf.sssup.it

Italian

September 10, 1981

Education and Training

January 2010

PhD in Computer Engineering from the ReTiS lab, Scuola Superiore S. Anna, Pisa, with a final dissertation on "Proportional Share Scheduling in General Purpose Operating Systems: Theory and Practice."

October 2005

Laurea Specialistica degree in Computer Engineering from the Università di Pisa, with a final mark of 110 / 110 cum laude. Master thesis title: "Virtual Machine Support for RTOS Based on a Microkernel."

December 2003

Laurea degree in Computer Engineering from the Università di Pisa, with a final mark of 110 / 110 cum laude, with a final project entitled "Nucleo di Sistema Operativo," (Operating System Kernel).

July 2000

Diploma di maturità from the Liceo scientifico Carlo Cattaneo di Follonica (GR), with final mark of 100 / 100.

Working Experience

July 2009 / June 2010

Research contract with the ReTiS Lab, as part of the IRMOS FP7 EU Research Project, on "Mechanisms for Temporal Predictability of Virtual Machines on Multi-Processor Servers."

Design and implementation of a soft real-time CPU scheduler in the context of the IRMOS project (see below), and its integration into the project framework. Soft real-time scheduling of virtual machines. Study on the predictability of live migration techniques in virtualised environments.

February 2010 / June 2010

Working as a consultant for Evidence S.r.l. developing an AUTOSAR compliant operating system for automotive applications.

Design and development of an AUTOSAR operating system extending the ERIKA OSEK OS.

May / August 2009

Participation to the Google Summer of Code with the project "Geom-based Disk Schedulers."

Design and development of a disk scheduling framework for FreeBSD, now integrated into the upstream kernel.

December 2007

Working as a consultant for Synthema S.r.l. on securing transmission/storage of the electronic exam reports of the University of Pisa.

Development of the subsystem of the university information system in charge of signing/verifying the stored copies of the electronic exam reports.

May / August 2007

Participation to the Google Summer of Code with the project "Porting Linux KVM to FreeBSD."

Development of a compatibility layer between Linux and FreeBSD and porting of the KVM hypervisor to the FreeBSD kernel.

September 2006

Working for Evidence S.r.l. enhancing Linux SD card support.

Development of SDHC support for Linux, for a private customer.

December 2005 / April 2006

Working for Evidence S.r.l. porting Linux 2.6.14 to a customer Samsung s3c2410-based ARM board.

Porting of the Linux kernel to a family of machines based on the s3c2410 ARM cpu produced by a private customer.

March 2005

Working as a consultant for Evidence S.r.l. writing a device driver supporting hot insertion and extraction of IDE-mounted Compact Flash cards under Linux on ARM.

Introduction of hotplug support into the Linux IDE driver.

Personal Skills and Competences

Mother tongue(s)

Other language

Self-assessment
European level^(*)

English

Italian

English

Understanding		Speaking		Writing
Listening	Reading	Spoken interaction	Spoken production	
C2	C2	B2	B2	C2

^(*)Common European Framework of Reference (CEF) level

Research Activities

Proportional Share scheduling, applied to CPU, disk and network resources; virtualisation techniques, with particular interest in their predictability; practical applications of the real-time theory.

Participation to the IRMOS (<http://www.irmosproject.eu/>) EU project. IRMOS aims at supporting interactive real-time applications in a Cloud environment.

Participation to the FRESCOR (<http://www.frescor.org/>) EU project. Frescor aimed at developing a real-time platform supporting advanced scheduling techniques, covering all the levels involved, from the OS kernel to the middleware and the application design.

Technical Skills and Competences

Experience in Linux/FreeBSD kernel programming (core, scheduler, block layer, virtualisation, and networking subsystems), gained through work on PC and embedded hardware during the PhD studies, work with Evidence S.r.l. and interaction with the communities.

Experience in the design and implementation of real-time operating systems, gained maintaining and actively developing the Shark operating system during the PhD studies and working on the ERIKA OSEK kernel.

Computer skills and competences

C, C++, Python, Java and Visual Basic programming. Intel, ARM7/9, and PPC (embedded) based architectures. Matlab and Scilab programming. Linux and FreeBSD systems administration. \TeX and \LaTeX typesetting.

Publications

Paolo Valente and Fabio Checconi.

High throughput disk scheduling with deterministic guarantees on bandwidth distribution.

To appear on IEEE Transactions on Computers, 2010

Tommaso Cucinotta, Fabio Checconi, Luca Abeni, and Luigi Palopoli.

Self-tuning schedulers for legacy real-time applications.

In Proceedings of the European Conference on Computer Systems (Eurosys 2010), Paris, France, April 2010

Dario Faggioli, Marko Bertogna, and Fabio Checconi.

Sporadic server revisited.

In Proceedings of 25th ACM Symposium On Applied Computing, Sierre, Switzerland, March 2010

Tommaso Cucinotta, Luca Abeni, Luigi Palopoli, and Fabio Checconi.

The wizard of os: a heartbeat for legacy multimedia applications.

In Proceedings of the 7th IEEE Workshop on Embedded Systems for Real-Time Multimedia, Grenoble (ESTMedia 2009), Grenoble, France, October 2009

Dario Faggioli, Fabio Checconi, Michael Trimarchi, and Claudio Scordino.

An edf scheduling class for the linux kernel.

In Proceedings of the 11th Real-Time Linux Workshop, Dresden, Germany, October 2009

Fabio Checconi, Tommaso Cucinotta, and Manuel Stein.

Real-time issues in live migration of virtual machines.

In Proceedings of the 4th Workshop on Virtualization and High-Performance Cloud Computing (VHPC 2009), Delft, The Netherlands, August 2009

Fabio Checconi, Tommaso Cucinotta, Dario Faggioli, and Giuseppe Lipari.

Hierarchical multiprocessor cpu reservations for the linux kernel.

In Proceedings of the 5th International Workshop on Operating Systems Platforms for Embedded Real-Time Applications (OSPert 2009), Dublin, Ireland, July 2009

Dario Faggioli, Michael Trimarchi, Fabio Checconi, Marko Bertogna, and Antonio Mancina.
An implementation of the earliest deadline first algorithm in linux.
In *Proceedings of 24th ACM Symposium On Applied Computing*, Honolulu, Hawaii, USA, March 2009

Marko Bertogna, Fabio Checconi, and Dario Faggioli.
Non-preemptive access to shared resources in hierarchical real-time systems.
In *Proceedings of the 1st Workshop on Compositional Theory and Technology for Real-Time Embedded Systems*, Barcelona, Spain, November 2008

Dario Faggioli, Antonio Mancina, Fabio Checconi, and Giuseppe Lipari.
Design and implementation of a posix compliant sporadic server for the linux kernel.
In *Proceedings of the 10th Real-Time Linux Workshop*, Guadalajara, Mexico, October 2008

Gabriele Cecchetti, Anna Lina Ruscelli, and Fabio Checconi.
W-cbs: A scheduling algorithm for supporting qos in ieee 802.11e.
In *Proceedings of ACM-IEEE QSHINE 2007*, Vancouver, Canada, August 2007

Marta Carbone, Luigi Rizzo, Gabriele Cecchetti, Fabio Checconi, and Anna Lina Ruscelli.
Wireless link emulation in onelab.
In *Proceedings of ACM-SIGCOMM ROADS 2007*, Warsaw, Poland, July 2007

Fabio Checconi and Paolo Valente.
Integrating hybrid with the anticipatory disk scheduler.
In *Proceedings, Work in Progress Session of the Euromicro Conference on Real-Time Systems (ECRTS 07)*, Pisa, Italy, July 2007

Theses

Fabio Checconi.
Proportional Share Scheduling in General Purpose Operating Systems: Theory and Practice.
PhD thesis, Scuola Superiore S. Anna, Pisa, Italy, January 2010

Fabio Checconi.
Virtual machine support for rtos based on a microkernel.
Master's thesis, Scuola Superiore S. Anna, Pisa, Italy, December 2005

Talks

Fabio Checconi and Luigi Rizzo.
Gemdisk: a geom class to emulate disk drives.
EuroBSDCon 2009, Cambridge, UK, September 2009

Fabio Checconi, Tommaso Cucinotta, Dario Faggioli, and Giuseppe Lipari.
Hierarchical multiprocessor cpu reservations for the linux kernel.
IRMOS Project Seminar—Real-time QoS Management in Clouds, Southampton, UK, December 2009