Michal Sojka

Curriculum Vitae

Personal Details

Contact — *E-mail:* ms@2x.cz

Other — *Born*: 28. 10. 1978 in Prague
Citizenship: Czech Republic
Marital Status: Married, 1 child
Sex: Male

Education

2003 – 2011 — *Ph.D., Control Engineering and Robotics*, Czech Technical University in Prague
Thesis: Resource Reservations and Analysis in Heterogeneous and Distributed Real-Time Systems
Adviser: Doc. Zdeněk Hanzálek

1997 – 2003 — *Ing. (M.Sc. equivalent), Control Engineering & Cybernetics*, Czech Technical University in Prague
Thesis: Implementation of Ethernet interface for control applications
Adviser: Ing. Pavel Píša

1993 – 1997 — Grammar school Arabská, Prague
Course: programming

Working Experience

2012 – present — Assistant professor
Dept. of Control Engineering, Faculty of Electrical Engineering, Czech Technical University in Prague

- Managing of ARTEMIS project SESAMO (Security and Safety Modelling)
- Industrial cooperation: Volkswagen, Porsche

2011 – 2012 — Postdoc researcher
Operating systems group (prof. Härtig), TU Dresden, Germany.

- Work on virtualization platform with small trusted computing base, i.e. virtualization based on micro-hypervisor and minimalistic user-level environment.
- European project PASSIVE.

2003 – 2011 — Research assistant
Center for Applied Cybernetics, Czech Technical University in Prague

- European projects OCERA and FRESCOR (real-time computing).

- Leader of a successful team in Eurobot contest.
- Adviser of cca 20 diploma/bachelor theses.
- Teaching: Discrete Event Systems, Real-Time Systems Programming, Open-Source Programming

2009 VxWorks consultant for Rockwell Automation

2006 – 2009 Embedded system developer at Merica s.r.o.

- Development and porting of industrial communication protocols for use in a safety-critical railway application.

1998 – 2003 Software designer and developer at Planetarium Prague

- Laser projection control system,
- Radio telescope control system,
- Employee attendance tracking and payroll reporting system,
- Interactive demonstrators, etc.

Languages

Czech – native

English – fluent

German – intermediate

Computer Skills

Programming Languages:

- C, C++, Pascal/Delphi, Assembler (x86, ARM, PowerPC, H8, Z80), Python, Matlab, UNIX Shell, PHP, GNU Make – *Advanced level*
- Perl, Java, Lisp, Prolog – *Basic level*

Technologies & Software:

- CAN, CORBA, CSS, DocBook, HTML, IEEE 802.11, LaTeX, LIN, ProfiBus, SQL, TCP/IP, USB, Virtualization, XML, XSLT
- Git, Subversion, CVS, Darcs
- OrCAD, Simulink, various office and graphics/DTP software
- Administration of UNIX systems

Operating systems:

- GNU/Linux, VxWorks, NOVA, RTEMS, RT-Linux, eCos, Windows

Open Source – active contributor to several projects. Among others:

- Linux kernel – USB 2.0 isochronous transfer (for Linux 2.5)
- Notmuch (email system)

Selected Publications

Journal Papers

M. Sojka, P. Píša, D. Faggioli, T. Cucinotta, F. Checconi, Z. Hanzálek, and G. Lipari, "Modular software architecture for flexible reservation mechanisms on heterogeneous resources," *Journal of Systems Architecture*, 2011.

Conference Papers ,

M. Vajnar, **M. Sojka**, and P. Píša, "Porting of real-time publish-subscribe middleware to Android," in *15th Real-Time Linux Workshop*. Open Source Automation Development Lab eG, 2013.

R. Lisový, **M. Sojka**, and Z. Hanzálek, "PCI Express as a killer of software-based real-time Ethernet," in *Real-Time Networks, The 12th International Workshop on*, July 2013.

S. Wächtler and **M. Sojka**, "Operating system noise: Linux vs. microkernel," in *14th Real-Time Linux Workshop*. Open Source Automation Development Lab eG, 2012.

M. Sojka, P. Píša, O. Špinka, O. Hartkopp, and Z. Hanzálek, "Timing Analysis of a Linux-Based CAN-to-CAN Gateway," in *Thirteenth Real-Time Linux Workshop*. Schramberg: Open Source Automation Development Lab eG, 2011, pp. 165–172. [Online]. Available: http://lwn.net/images/conf/rtlws-2011/proc/Sojka.pdf

M. Sojka, P. Píša, M. Petera, O. Špinka, and Z. Hanzálek, "A comparison of Linux CAN drivers and their applications," in *5th IEEE International Symposium on Industrial Embedded Systems (SIES)*, 2010.

M. Sojka, M. Molnár, and Z. Hanzálek, "Experiments for real-time communication contracts in IEEE 802.11e EDCA networks," in *Factory Communication Systems. IEEE International Workshop on*, 2008, pp. 89 – 92.

M. Peca, **M. Sojka**, and Z. Hanzálek, "SPEJBL – The biped walking robot," in *Preprints 7th IFAC International Conference on Fieldbuses and nETworks in industrial and embedded systems (FET)*. Toulouse: Universite Toulouse, 2007, pp. 63–70.

P. Šůcha, M. Kutil, **M. Sojka**, and Z. Hanzálek, "TORSCHE scheduling toolbox for Matlab," in *IEEE Symposium on Computer-Aided Control System Design*, 2006, pp. 50 – 52.

M. Sojka, "Optimization-based approach to response-time analysis for tasks with offsets," in *International Student Conference on Electrical Engineering (POSTER)*. Prague, Czech Republic: Czech Technical University in Prague, 2006.

O. Špinka, J. Krákora, **M. Sojka**, and Z. Hanzálek, "Low-cost avionics system for ultra-light aircraft," in *11th IEEE International Conference on Emerging Technologies and Factory Automation*. IEEE, 2006, pp. 102–109.

Technical Reports

M. Sojka, R. Lisový, and P. Píša, "SocketCAN and queueing disciplines," Czech Technical University in Prague, Tech. Rep., 2011, study for Volkswagen, aG.

Interests

Music – I play dobro, bass guitar and guitar. I was a member of several amateur bands, now I am active only in one of them.

Hiking, Cycling

Prague, December 3, 2013