

Igor A. Talzi

- CONTACT INFORMATION** Bernoullistrasse 16 *Voice:* +41-(0)61-267-0390
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- RESEARCH INTERESTS** Ad-hoc mobile communications; embedded systems; wireless sensor networks (WSN); self-organization, power-awareness, optimization, delay tolerance and mobile code concepts applied to resource-constrained devices; mobile code compression and robustness; reconfigurable virtual machines for in-network processing.
- EDUCATION** **University of Basel, Switzerland**
PhD in *Computer Networks* under supervision of Prof. Dr. Christian Tschudin, Feb 2006 - Jul 2011. The work was co-refereed by Prof. Gustavo Alonso from ETH Zürich.
Dissertation topic: "Dynamic Code Morphing in Network Embedded Systems."
St-Petersburg State Polytechnic University, Russia
Dipl. El.-Ing. in *Computers, Systems and Networks*, Feb 2005.
Thesis topic: "Three-Axial Sensor System for Accelerations and Angular Speeds Measurements."
St-Petersburg State Polytechnic University, Russia
BSc in *Computer and Information Science*, Jun 2003.
Thesis topic: "Program Emulator of an Active Network Segment."
- RESEARCH ACTIVITIES** **University of Basel, Switzerland**
Research Assistance **Feb 2006 - Jul 2011**
Included PhD research and teaching assistance duties.
<http://cn.cs.unibas.ch/people/iat/>
Environmental Measurement Support Resource (EMSR) project **Apr 2007 - Dec 2009**
EMSR was intended to operate largely as an extension to the *Sensor Network Platform Kit*. Participated in the design/specification phase.
• <http://www.snm.ethz.ch/Projects/MICSSensorNetworkPlatformKit>
PermaSense project **Feb 2006 - Mar 2007**
Architecture design (sw/hw), implementation (TinyOS-based sensor network, CGI-script based web-interface, Java-based GPRS-bridge).
• <http://www.permasense.ch/>
- SELECTED PUBLICATIONS** Igor Talzi and Christian Tschudin, *Online Code Compression in Wireless Sensor Networks*, in Proceedings of the International Conference on Collaboration Technologies and Systems (CTS'11), pp. 122-130, 2011.
Jan Beutel, Stephan Gruber, Andreas Hasler, Roman Lim, Andreas Meier, Christian Plessl, Igor Talzi, Lothar Thiele, Christian Tschudin, Mattias Wöhrle and Mustafa Yücel, *PermaDAQ: A Scientific Instrument for Precision Sensing and Data Recovery under Extreme Conditions*, in Pro-

ceedings of the 8th ACM/IEEE Int'l Conference on Information Processing in Sensor Networks (IPSN/SPOTS'09), pp. 265-276, 2009.

Andreas Hasler, Igor Talzi, Jan Beutel, Christian Tschudin and Stephan Gruber, *Wireless Sensor Networks in Permafrost Research – Concept, Requirements, Implementation and Challenges*, in Proceedings of the 9th International Conference on Permafrost (NICOP'08), vol. 1, pp. 669-674, 2008.

Igor Talzi, Sandro Schönborn and Christian Tschudin, *Providing Data Integrity in Intermittently Connected Wireless Sensor Networks*, in Proceedings of the 5th International Conference on Networked Sensing Systems (INSS'08), pp. 11-18, 2008.

Igor Talzi, Andreas Hasler, Stephan Gruber and Christian Tschudin, *PermaSense: Investigating Permafrost with a WSN in the Swiss Alps*, in Proceedings of the 4th Workshop on Embedded Networked Sensors (EmNets'07), pp. 8-12, 2007.

PROFESSIONAL EXPERIENCE

”SWD Software Ltd.” (official representative of ”QNX Software Systems Ltd.”), St-Petersburg, Russia

Tutor and technical support engineer

Apr 2005 - Feb 2006

Preparation of course documentation, lecturing and carrying out lab exercises for two official QNX-related courses: ”Realtime programming for the QNX Neutrino RTOS” and ”System Architecture of the QNX Neutrino RTOS.” In parallel, worked as a technical support engineer on QNX- and Empress-based solutions.

JSC ”Advanced System Design” (official technical partner of ”Actel Corp.”), St-Petersburg, Russia

Firmware and FPGA design/verification engineer

Jul 2003 - Jun 2004

Specification and implementation of system firmware and FPGA design for a pipeline monitoring system. Other projects included design of an embedded processor core, various communication controllers.

PROFESSIONAL SKILLS

- Languages: C/C++, Java, various assemblers (x86, i8051, MSP430), nesC, Verilog, AHDL, Unix shell scripts (Bash, AWK), Python.
- Real-time operating systems: QNX 4.x/6.x.
- WSN operating systems: TinyOS 1.x/2.x, ContikiOS, SoS.
- Sensor platforms: micaZ, TinyNode, TelosB, Sentilla Perk.
- FPGA platforms and design flows: Actel, Altera, Mentor Graphics, Cadence.
- Modeling/Simulation tools: TOSSIM (TinyOS), Cooja (ContikiOS), OMNeT++ (common network behavior).
- Operating systems: Unix/Linux-like.

LANGUAGES

English (fluent), Russian (native), German (basic).

REFERENCES

Prof. Dr. Christian Tschudin
University of Basel, Switzerland (Tel: +41-(0)61-267-0557, E-mail: Christian.Tschudin@unibas.ch)

Dr. Thomas Meyer
Patton-Inalp Networks AG, Switzerland (Tel: +41-(0)31-985-2537, E-mail: thomas.meyer@patton-inalp.com)

Dr. Andreas Hasler
University of Zürich, Switzerland (Tel: +41-(0)44-635-5188, E-mail: andreas.hasler@geo.uzh.ch)