Nicolas Boichat

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Education

NUS Graduate School for Integrative Sciences and Engineering *August 2010 - Present*
National University of Singapore, Singapore

Master in Communication Systems — Average: 5.83/6.00 *2007–2010*
- Specialisation in Computer Engineering
- Thesis title: *Synthesis of Multiprocessor System-on-Chip for Streaming Applications*

Swiss Federal Institute of Technology Lausanne (EPFL), Lausanne, Switzerland

Bachelor in Communication Systems — Average: 5.63/6.00 *2004–2007*
Swiss Federal Institute of Technology Lausanne (EPFL), Lausanne, Switzerland

Professional activities

Embedded software engineer, *Jitcomm*, Singapore (http://www.jitcomm.com/) *03.2008–08.2008*
- Involved in the development of a Linux-based embedded system on Xilinx FPGA: custom IP driver development, TCP/IP acceleration...

Embedded software engineer, *K-Team*, Switzerland (http://www.k-team.com/) *10.2007–07.2009*
- Porting a USB host controller driver from Linux kernel version 2.4 to 2.6, debugging of a camera driver, and other minor developments, on an Xscale-based embedded system controlling mobile robots.

Teaching assistant, *Embedded Systems*, *Computer architecture*, EPFL *2005–2008*
- Helping students to develop a VHDL IP core to use an LCD extension for an Altera FPGA board.
- Introduction to VHDL and assembly programming.

Embedded software engineer, *Omega Electronics*, Switzerland *2003–2004*
- Developed a Linux-based embedded system for the Passenger Information Systems department

Open-source projects involvement

Google Summer of Code student *2010*
- USB sniffer for the BeagleBoard project (http://www.beagleboard.org/).

mactel-linux project *2006-2009*
- Development of Linux kernel drivers and patches, as well as various supporting applications to add or improve support for Intel-based Apple computers

DDCcontrol project (http://ddccontrol.sourceforge.net/) *2005-2007*
- Project manager for the open source project DDCcontrol: monitors parameters control, e.g. brightness and contrast, using the DDC/CI protocol on DVI or VGA cable.

Publications

Nicolas Boichat, Nadia Khaled, Francisco Rincon, David Atienza, "**Wavelet-Based ECG Delineation on a Wearable Embedded Sensor Platform**", Body Sensor Networks 2009, Berkeley, USA, June 2009.

Francisco Rincon, Nicolas Boichat, Victor Barbero, Nadia Khaled, David Atienza, "**Multi-Lead Wavelet-Based ECG Delineation on a Wearable Embedded Sensor Platform**", Computers in Cardiology 2009, Park City, September 2009.

Chen Liang, Nicolas Boichat, Tulika Mitra, "**Customized MPSoC synthesis for task sequence**", IEEE 9th Symposium on Application Specific Processors (SASP) 2011.

Skills

Computing:
- Mainly Java, C (Linux kernel programming), C++, Bash, Ruby.
- Scala, PHP, Perl, TCL, Matlab/Octave, Mathematica, R.
- Version control systems: git, CVS, SVN.
- Internet protocols: TCP, IP, HTTP, FTP, SMTP, POP3...
- LaTeX, HTML, CSS.
- VHDL, Altera Quartus, Xilinx ISE/EDK, Modelsim.

Embedded systems:
- MSP430: Shimmer, Texas Launchpad
- Atmel: Arduino
- ARM: Beagleboard (-XM)
- FPGA: Altera (Nios II), Xilinx (PowerPC, Microblaze)

Biology:
- Basic cell biology (cell culture, immunostaining...)
- Microscopy (confocal, deconvolution...)
- Image analysis (segmentation, colocalisation)

Leadership Activities

Safety lead, NUS Centre for Bioimaging Sciences.	*2012*
Class representative, Department of Communication Systems in EPFL.	*2007–2010*
Coach, Undergraduate student mentor	*2005–2006*

- Supervisor of a team of 8 coaches within the Department of Communication Systems in EPFL
- Organising of activities to enable first-year students to know one another
- Advising them on topics such as learning methods and administrative matters.

Awards and Honors

EPFL Excellency Scholarship	*2007*

- Offered to Master students with outstanding academic records.

Prix de l'Amicale des Physiciens de la Protection AC	*2004*

- For best results in the final high school exam - Physics and Applied Mathematics category.

Friedrich Dessauer award	*2002*

- For the best second year high-school student in mathematics, physics, chemistry and biology.

Languages

- French, mother tongue.
- English, fluent in both writing and speaking.
- German, basic knowledge.
- Vietnamese, basic knowledge.

Hobbies

- Photography
- Travelling
- Involvement in open-source projects
- Blogging (http://drinkcat.blogspot.com/)