

Nicolas HILI

Doctor of Philosophy (PhD) in “Embedded System” and “Model-Driven Engineering” fields
PhD degree obtained at CEA LETI / DACLE and at SIGMA team of Laboratoire d’Informatique de Grenoble
Thesis defended on 11th December, 2014

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PROFESSIONAL EXPERIENCE

- Jan. 2015 – present** **Post-doctoral Researcher at LIG (Laboratoire d’Informatique de Grenoble, France)**
Engineering Human Computer Interaction (EHCI) team (Grenoble, France).
- ▶ Design of a web-based multimodel editor for HCI (HTML5, Javascript, NodeJS, NoSQL, etc.) ;
 - ▶ Project involving industrial partners from the nuclear plant field (CEA, EDF, Atos, Alstom, Esterel, etc.) ;
 - ▶ Personal responsibility in the project life-cycle (project meetings, reports, demonstrations, etc.).
- Oct. 2014 – Dec. 2014** **Research Engineer at Open SAS (Grenoble, France)**
Service realized at CEA LETI for a Europe / Japan project on Internet of Things.
- ▶ Development of an Eclipse tool for the discovery and the management of geolocalized devices ;
 - ▶ Development of a web-based, responsive and multi-platform (PC, tablet and mobile) version of this tool ;
 - ▶ Development of OSGi bundles for the Felix platform.
- Oct. 2011 – Oct. 2014** **Doctor of Philosophy (PhD) at CEA LETI / DACLE (Grenoble, France)**
Formalization of a collaborative method for Embedded system design.
“Embedded system” and “Model-Driven Engineering” fields.
Co-supervised by the SIGMA team of LIG (Laboratoire d’Informatique de Grenoble).
- ▶ Application of model-driven engineering techniques for embedded system design ;
 - ▶ Development of an Eclipse tool to support the proposed method (TRL 4-5) ;
 - ▶ Development of parallel applications for multicore / manycore platforms ;
 - ▶ Supervision of three internships on the design of software demonstrators.
- Sep. 2011 – Jan. 2013** **Teaching at University Institute of Technology (Grenoble, France)**
Responsibilities of a “Object-oriented system design” course (70h) ; Courses / tutorials / projects / exams.
Responsibilities of a “Information system specification method” course (16h) ; Courses and tutorials.
- ▶ Object-oriented specification and design ;
 - ▶ Information system development in Java ;
 - ▶ UML modeling language, software development methods and processes.
- Feb. 2011 – Sep. 2011** **Master Research Internship at CEA LETI / DACLE (Grenoble, France)**
Formalization and tooling of a parallel application design method for multicore / manycore platforms using model-driven engineering techniques.
- Sep. 2009 – Jan. 2011** **Software Development Freelancer (Paris, France)**
Development of several desktop and web applications for companies (ROI-MÉDIA, ENSEA, RENOV HABITAT).

ABROAD EXPERIENCE

- Jul. 2014** **Working Group in Japan for a Europe / Japan project on Internet of Things**
National Institute of Informatics (Tokyo, Japan).
- ▶ Presentations and discussions on modeling tools and model-checking techniques ;
 - ▶ Supervision “on site” of an intern to integrate model checking techniques with Xtext / Xtend Eclipse modeling tools.

EDUCATION

- 2011 – 2014** **Doctor of Philosophy (PhD), Computer science**
Grenoble University (Grenoble, France)
- 2008 – 2010** **Engineer’s Degree, main field “System Engineering”**
École nationale supérieure de l’électronique et de ses applications (Paris, France)
- Before 2008** **Intensive Foundation Degree, main field “Engineering sciences” (Toulon, France)**
Scientific Baccalaureate, main field “Engineering sciences” (Toulon, France)

TECHNICAL SKILLS

<i>Software Development</i>	Java, UML, OSGi, C, C++, Python ;
<i>Hardware Development</i>	VHDL ;
<i>Architecture</i>	Arduino, Raspberry PI, DSP, FPGA, Cyclone II, Motorola 68000 ;
<i>Model-Driven Engineering</i>	Metamodel (UML, Ecore, EMF, Xtext), Model-to-Model Transformation (ATL, Epsilon), Model-to-Text Transformation / Code generation (Acceleo, JET), Graphical Model Editor design (Graphiti, Sirius, GMF, Papyrus) ;
<i>Web Development</i>	HTML5, Javascript, NodeJS, NoSQL, PHP5, SQL, frameworks (Foundation, Zend ...) ;
<i>Environment</i>	Linux, Eclipse, Maven, versioning tools (Git, SVN, Mercurial), LaTeX.

LANGUAGES

<i>French</i>	Mother tongue;	<i>Spannish</i>	Basics (to be reactivated);
<i>English</i>	Scientific;	<i>Japanese</i>	Basics (to be reactivated).
<i>Portuguese</i>	In learning;		

PUBLICATIONS

► International Conferences:

- Aug. 2015 **A Power Consumption Estimation for Embedded Software Design using Trace Analysis**
Yassine Ben Atitallah, Julien Mottin, Nicolas Hili, Thomas Ducroux, Guillaume Godet-Bar
4th Euromicro Conference series on Software Engineering and Advanced Applications (SEAA'2015, Funchal, Madeira, Portugal).
- June 2015 **Innovative Key Features for Mastering Model Complexity: FlexiLab, a Multimodel Editor Illustrated on Task Modeling**
Nicolas Hili, Yann Laurillau, Sophie Dupuy-Chessa, Gaëlle Calvary
ACM SIGCHI 7th Symposium on Engineering Interactive Computing Systems (EICS'2015, Duisburg, Germany).
- Oct. 2014 **A Model-Driven Approach for Embedded System Prototyping and Design**
Nicolas Hili, Christian Fabre, Sophie Dupuy-Chessa, Dominique Rieu
IEEE International Symposium on Rapid System Prototyping (RSP'2014, New Dehli, India).
- Sep. 2014 **Model-Based Platform Composition for Embedded System Design**
Nicolas Hili, Christian Fabre, Sophie Dupuy-Chessa, Dominique Rieu, Ivan Llopard
IEEE 8th International Symposium on Embedded Multicore / Many-core Systems-on-Chip (MCSoc'2014, Aizu-Wakamatsu, Japan).
- June 2014 **A Parallel Action Language for Embedded Applications and its Compilation Flow**
Ivan Llopard, Albert Cohen, Christian Fabre, Nicolas Hili
Workshop on Software and Compilers for Embedded Systems (SCOPES'2014, Sankt Goar, Germany).
- Feb. 2012 **Efficient Embedded System Development: A Workbench for an Integrated Methodology**
Nicolas Hili, Christian Fabre, Sophie Dupuy-Chessa, Stéphane Malfoy
Embedded Real Time Software and Systems (ERTS²'2012, Toulouse, France).

► National Conference:

- May 2012 **«HOE»², une méthode intégrée pour le développement des systèmes embarqués**
Nicolas Hili, Christian Fabre, Dominique Rieu, Sophie Dupuy-Chessa, Stéphane Malfoy
INFormatique des ORganisations et Systèmes d'Information et de Décision (INFORSID 2012, Montpellier, France).

► PhD Thesis:

- Dec. 2014 **Une méthode pour le développement collaboratif de systèmes embarqués**
Nicolas Hili (supervised by Sophie Dupuy-Chessa, Dominique Rieu and Christian Fabre)
PhD thesis, Grenoble University (Grenoble, France).

► Tutorials and Posters:

- Nov. 2013 **How to Efficiently and Rapidly Build Graphical Modelling Editors using Graphiti**
Nicolas Hili
Presentation and tutorials at the Eclipse DemoCamps (Grenoble, France).
- July 2013 **Divide and Conquer: Separation of Concerns to Parallelize Developments**
Nicolas Hili, Christian Fabre, Dominique Rieu, Sophie Dupuy-Chessa
Poster presented at the Cyber-Physical System Summer School (CPS'2013, Grenoble, France).
- June 2013 **Diviser pour mieux régner : le cas du développement des systèmes embarqués**
Nicolas Hili
Poster presented at the 16^{ème} Journées Nationales du Réseau Doctoral en Micro-nanoélectronique (JNRDM'2013, Grenoble, France).

REFERENCES

Gaëlle Calvary and Sophie Dupuy-Chessa

Professors at Grenoble University, Post-doctoral advisor
Laboratoire d'Informatique de Grenoble
EHCI (Engineering Human Computer Interaction) team
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Vincent Olive

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Levent Gurgen

Senior Researcher at CEA LETI, Advisor (Clout Project)
Direct advisor during the service realized at Open SAS for the Europe / Japan Project in the context of Internet of Things
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HOBBIES

Sports

Trail, Running (Lut Lyon, Grenoble-Vizille, Trail des passerelles, ...),
Squash, Mountain Bike, Hiking, Snowboard, Igloo Building

Association

Treasurer of Synergy, association for PhD Students and Staff of
the LIG laboratory, in 2013 and 2015

- ▶ *Co-organization of scientific events (Human Talks, Alpes Java User Group) ;*
- ▶ *Cultural, sportive and social events.*