

# Alessandro Sivieri

*Curriculum Vitae* last update 01/2017

Milano, Italy

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## Personal informations

Date of birth June 29, 1985  
Place of birth Rovigo (RO), Italy  
Citizenship Italian

## Current position

03/2014– **Postdoctoral Researcher**, *Politecnico di Milano*, Milano, Italy.

current Research in Smart Buildings Energy Management:

- Integration of different technologies to collect data from sensors: Wireless Sensor Networks, (non-)commercial embedded systems, industry-level sensors and communication protocols. Deployment of embedded systems and development of applications in C/Python/Java (Scala)/Erlang
- Design and implementation of relational databases to archive the collected data
- Design of algorithms, based on Python mathematical frameworks (Numpy/Pandas), to find correlations in the data and calculate performance indicators of the energy systems
- System integration between DBMS, data analysis applications and behavior modeling software to control HVAC systems (LabVIEW)
- Data visualization on Web platforms, using Python Web frameworks.

Projects:

- Energy Commission of Politecnico di Milano
- RELAB (Renewable heating and cooling lab)  
<http://www.relabmonitoring.polimi.it/>
- SCUOLA (Smart campus as urban open labs)  
<http://www.fondazionepolitecnico.it/cosa-facciamo/progetti-di-innovazione/item/scuola-smart-campus-as-urban-open-labs#.WD7P2CsrLyJ>

Teaching assistant.

## Employment history

01/2011– **Ph.D. Student**, *Politecnico di Milano*, Milano, Italy.

02/2014 Research areas: Software Engineering, Programming languages and frameworks for distributed systems.

Projects:

- Customized version of the Erlang Virtual Machine and framework for distributed embedded applications (Erlang, C)
- Wireless Sensor Network for building/environment monitoring (TinyOS).

Teaching assistant.

- 07/2012– **Developer**, *Centro per lo sviluppo dell'innovazione (CESVIN)*, Cremona, Italy.  
09/2012 Development of an Android app for TEMA Srl GSM/UMTS Gateway  
<https://play.google.com/store/apps/details?id=it.polimi.temasrl>.  
Development of a smartphone application interfacing with GSM/UMTS gateways (Java).
- 05/2009– **Developer**, *Google Open Source Programs Office*, Mountain View, CA, USA.  
08/2009 Participation to the program “Google Summer of Code 2009”.  
New ideas for file managers leveraging the concept of *Semantic Desktop*, part of the *KDE-Nepomuk* project (C++).
- 04/2007– **Web developer**, *Politecnico di Milano*, Milano, Italy.  
06/2009 Developer of the university Websites within the Communications and External Relations office.  
Maintenance on existing internally-developed frameworks (PHP, HTML, CSS); research for existing CMS to be used in the next version of the Websites (Typo3).
- 05/2008– **Web portal maintainer**, *Associazione MeglioMilano*, Milano, Italy.  
12/2008 Maintainer of the Web portal <http://www.sistemauni.it>.  
Maintenance of an existing Website and framework (Typo3).

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## Teaching experience

- 2010–current **Teaching assistant**, *Politecnico di Milano*, Milano, Italy.  
Topics:
- Computer science 101
  - Android apps development
  - Distributed systems and middleware frameworks (e.g., CORBA, publish-subscribe)
  - Programming languages paradigms: object oriented, functional, logic programming.

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## Education

- 01/2011– **Ph.D. in Computer science and Engineering**, *Politecnico di Milano*, Milano, Italy.  
02/2014 Distributed systems, Wireless Sensor Networks, Software Engineering, functional programming paradigm and languages (Erlang, Scala).
- 11/2011– **Professional engineer qualification**, *Politecnico di Milano*, Milano, Italy.  
02/2012
- 03/2008– **M.Sc. (Laurea Specialistica DM 509/99) in Computer science and Engineering**, *Politecnico di Milano*, Milano, Italy.  
12/2010 Programming languages, software engineering, artificial intelligence and robotics.
- 10/2004– **B.Sc. (Laurea DM 509/99) in Computer science and Engineering**, *Politecnico di Milano*, Milano, Italy.  
03/2008 Programming languages, software engineering, networks and Internet protocols, Web development.
- 09/1999– **Scientific High School Degree**, *Liceo Scientifico “G. Galilei”*, Adria (RO), Italy.  
06/2004 Specialization in mathematics and computer science.

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## Additional education

- 2012–2013 **“Functional Programming Principles in Scala”, “Principles of Reactive Programming”**, *Coursera.org*.

- 09/2012 **LASER Summer School - “Innovative languages for software engineering”**,  
*Isola d’Elba, Italy.*
- 07/2011 **CONET Summer School - “Networked embedded systems - humans in the  
loop”**, *Bertinoro (FC), Italy.*
- 09/1996– **Music courses**, *Conservatorio di Musica “A. Buzzolla”*, Adria (RO), Italy.  
06/2003 Classical guitar, music theory, chamber music, school chorus.

## Languages

Italian **Native**  
English **Fluent**

## Interests

Guitarist, classical and modern music.

## Other informations

IEEE member  
Driving license type B

## Publications

Marica Fumagalli, Alessandro Sivieri, Marcello Aprile, Mario Motta, and Matteo Zanchi. Monitoring of gas driven absorption heat pumps and comparing energy efficiency on primary energy. *Renewable Energy*, 2016.

Alessandro Sivieri, Luca Mottola, and Gianpaolo Cugola. Building internet of things software with eliot. *Computer Communications*, 2016.

Alessandro Sivieri. *ELIoT: A Programming Framework for the Internet of Things*. PhD thesis, Politecnico di Milano, 2014.

Alessandro Sivieri. Velux-lab: Monitoring a nearly zero energy building. In *Proceedings of the Fifth Workshop on Real-World Wireless Sensor Networks*, 2013.

G. Alli, L. Baresi, A. Bianchessi, G. Cugola, A. Margara, A. Morzenti, C. Ongini, E. Panigati, M. Rossi, S. Rotondi, S. Savaresi, F.A. Schreiber, A. Sivieri, L. Tanca, and E. Vannutelli Depoli. Green move: towards next generation sustainable smartphone-based vehicle sharing. In *Proceedings of the 2nd IFIP Conference on Sustainable Internet and ICT for Sustainability (SustainIT)*, 2012.

A. Sivieri, L. Mottola, and G. Cugola. Drop the phone and talk to the physical world: Programming the internet of things with erlang. In *Proceedings of the 3rd International Workshop on Software Engineering for Sensor Network Applications (SESENA)*, 2012.

A. Sivieri. Erlang meets wsns: A functional approach to wsn programming. In *Proceedings of the 10th IEEE International Conference on Pervasive Computing and Communications Workshops (PERCOM Workshops)*, 2012.

Alessandro Sivieri, Gianpaolo Cugola, and Carlo Ghezzi. Computational rest meets erlang. In *Proceedings of the 49th international conference on Objects, models, components, patterns (TOOLS)*, 2011.