

## At a Glance

- Date and place of birth: September 12<sup>th</sup>, 1980 - Milan (Italy).
- Research themes: Networked embedded software, Cyberphysical systems (CPS), Wireless sensor networks (WSNs), Internet of Things (IoT), Drone sensor networks, Real-world deployments.
- Current and past positions (main):
  - Associate Professor, Politecnico di Milano (Italy): 2015 to date.
  - Senior Researcher, SICS Swedish ICT: 2009 to date.
  - Visiting Professor, Graz University of Technology (Austria): 2015.
  - Assistant Professor (permanent appointment), Politecnico di Milano (Italy): 2012 to 2015.
- Awards & Recognition:
  - Individual: Google Faculty Award 2015, MIT Technology Review Italia Young Innovator Award 2013, Postscapes' IoT Top 100 Thinkers 2012 and 2011, ERCIM Cor Bayeen Award 2011, EWSN/-CONET Best European Ph.D. Thesis Award 2009, panel member at the "Safe and Secure IoT" event at House of Lords - UK Parliament 2014.
  - Publications: ACM SigMobile Research Highlight 2016, Best Paper Award ACM MOBISYS 2016, Best Paper Award ACM DRONET 2016, Best Paper Award ACM/IEEE IPSN 2011, Best Paper Award ACM/IEEE IPSN 2009, Best Demo Award ACM SENSYS 2007, Best Paper Runner-up ACM/IEEE IPSN 2012, Best Paper Candidate IEEE SRDS 2009.
- Community service:
  - Associate editor for ACM Transactions on Sensor Networks: 2016 to date.
  - PC co-chair for ACM SENSYS 12017, ACM EWSN 2017, IEEE DCOSS 2015; guest editor for IEEE Internet Computing - Special Issue on "Building IoT Software"; track-chair for IEEE ICCCN 2017.
  - Routinely PC member for ACM SENSYS, ACM/IEEE IPSN, IEEE ICDCS, IEEE RTSS, IEEE Percom, IEEE DCOSS, IEEE SRDS, ACM EWSN, and many others.
  - Authored a widely recognized scientific tutorial on sensor network programming with 200+ attendees to date, held at ACM PLDI, CPSWEEK, ACM/USENIX Middleware, and summer schools.
- Funded projects:
  - Co-applicant for several EU and national calls, totalling €2+mln of funding to the research unit.
  - Acted as WP leader in FP7 STREP projects, acted as cluster leader in FP7 NoE projects.
- Teaching:
  - Currently advising 2 Ph.D. students, plus 26 M.Sc. students under supervision or supervised.
  - Taught 12 grad courses and guest lectures, summer/winter school seminars, and undergrad courses.
  - Main opponent/examiner for 2 Ph.D. students, co-examiner for 1 Ph.D student.
- Publications:
  - 82 peer-reviewed publications, including:
    - \* 16 journal articles, of which 11 ACM or IEEE Transactions articles.
    - \* 27 papers at conferences with CORE rank A\* or A, of which 1 MOBISYS, 6 ACM/IEEE IPSN (1 single author), 3 ACM SENSYS, 2 ACM/IEEE ICSE, 2 IEEE SRDS, 1 IEEE Percom, 1 ACM/USENIX Middleware, 1 IEEE MASCOTS, 8 ACM EWSN, 1 BPM, and 1 FORTE.
  - Totalling 3300+ citations, H index is 28 with first paper published in 2006 (source: Google Scholar).
- Systems, real-world deployments, and open-source releases:
  - Domus dei Putti Danzanti [33]: aerial photogrammetry of archaeological sites using coordinating aerial drones, based on the open-source Voltron [33] programming system.
  - Low-power Wireless Bus (LWB)[40]: networking architecture for CPS, open-source release.
  - pTunes[43]: runtime parameter adaptation for low-power MAC protocols, open-source release.
  - Loupe [11, 59]: model-checking of Publish-Subscribe architectures, open-source release.
  - Torre Aquila [53]: monitoring of heritage buildings using sensor networks, based on the open-source TeenyLIME [56] middleware.
  - TRITon [46]<sup>2</sup>: closed-loop adaptive lighting in operational road tunnels using sensor networks, based on the open-source Logical Neighborhoods [64] abstraction and TeenyLIME [56] middleware.

<sup>1</sup>Last update: March 23<sup>rd</sup>, 2017.

<sup>2</sup>Patent pending

## Personal Data

*Date and Place of Birth:* September 12<sup>th</sup>, 1980 - Milan (Italy)  
*Citizenship:* Italian  
*Languages:* Italian (native), English (fluent), German (high school)  
*Office:* Politecnico di Milano- Dipartimento di Elettronica, Informazione e Bioingegneria  
Via Golgi 42 - 20100 Milano (Italy)  
*Office:* Electrum building, floor B6  
Isafjordsgatan 22/Kistagängen 16 - 164 40 Kista, Stockholm (Sweden)  
*Phone:* +39 02 2399 3583 / +46 76 7881543  
*Web:* [home.deib.polimi.it/mottola](http://home.deib.polimi.it/mottola), [www.sics.se/~luca](http://www.sics.se/~luca)  
*E-mail:* [luca.mottola@polimi.it](mailto:luca.mottola@polimi.it), [luca@sics.se](mailto:luca@sics.se)

## Current and Past Positions

*April 2015 -* **Associate Professor**  
Dipartimento di Elettronica, Informazione e Bioingegneria  
Politecnico di Milano (Italy)

*January 2010 -* **Senior Researcher**  
Networked Embedded Systems Group  
SICS Swedish ICT, Stockholm (Sweden)

*January 2015 - June 2015* **Visiting Professor**  
Institute for Technical Informatics  
Graz University of Technology (Austria)

*January 2012 - March 2015* **Assistant Professor** (permanent appointment)  
Dipartimento di Elettronica, Informazione e Bioingegneria  
Politecnico di Milano (Italy)

*January 2009 - January 2010* **Senior Researcher - ERCIM Alain Bensoussan Fellow**  
Networked Embedded Systems Group  
SICS Swedish ICT, Stockholm (Sweden)

*June 2008 - December 2008* **Post-doctoral Researcher**  
Dipartimento di Ingegneria e Scienza dell'Informazione - University of Trento (Italy)  
and Embedded Systems Unit - Bruno Kessler Foundation, Trento (Italy)

*September 2006 - April 2007* **Research Scholar**  
Viterbi School of Computer and Electrical Engineering  
University of Southern California, Los Angeles (CA, USA)

*March 2005 - May 2008* **Ph.D. Student**  
Dipartimento di Elettronica e Informazione  
Politecnico di Milano (Italy)

## Education

March 2005 - May 2008

### Ph.D. in Computer Engineering

Dipartimento di Elettronica e Informazione, Politecnico di Milano (Italy).

Ph.D. Thesis (Major Research Topic):

*Programming Wireless Sensor Networks: From Physical to Logical Neighborhoods*

Advisor: Prof. Gian Pietro Picco (Politecnico di Milano, Italy)

Opponent: Prof. Matt Welsh (Harvard University, USA)

Minor Research Topic:

*Accurate Verification of Publish-Subscribe Architectures*

Advisor: Prof. Carlo Ghezzi (Politecnico di Milano, Italy)

September 2003 - May 2005

### M.Sc. in Computer Science

Computer Science Department, University of Illinois at Chicago

GPA: 5.0/5.0

September 1999 - December 2004

### Laurea degree (equivalent to M.Sc.) in Computer Engineering

Politecnico di Milano

Thesis: *Overlay Management for Publish-Subscribe in Mobile Environments*

Advisor: Prof. Gian Pietro Picco (Politecnico di Milano, Italy)

Grade: 100/100 summa cum laude.

## Awards & Recognition

- In 2016, *ACM SigMobile Research Highlight* for the paper “Reactive Control of Autonomous Drones”, appeared at ACM International Conference on Mobile Systems, Applications, and Services (MOBISYS).
- In 2016, *Best Paper Award* at ACM International Conference on Mobile Systems, Applications, and Services (MOBISYS), Singapore.
- In 2016, *Best Paper Award* at the ACM International Workshop on Micro Aerial Vehicle Networks, Systems, and Applications for Civilian Use (DRONET), Singapore.
- In 2015, *Google Faculty Award* for research work about computing on intermittently-powered embedded devices.
- In 2014, panel member for the “Safe and Secure Internet of Things” event at the *House of Lords - UK Parliament*.
- In 2013, *MIT Technology Review Italia Young Innovator Award*, given by MIT Technology Review Italia and RIEForum.
- In 2012, listed amongst *Postscapes’ Internet of Things Top 100 Thinkers*, partly also by public vote.
- In 2011, *ERCIM Cor Bayeen Award* to a promising young researcher in computer science and applied mathematics.
- In 2011, listed amongst *Postscapes’ Internet of Things Top 100 Thinkers*, partly also by public vote.
- In 2011, *Best Paper Award* at ACM/IEEE International Conference on Information Processing in Wireless Sensor Networks (IPSN/SPOTS - part of CPSWEEK), Chicago (IL, USA).
- In 2009, *Best Paper Award* at ACM/IEEE International Conference on Information Processing in Wireless Sensor Networks (IPSN/SPOTS - part of CPSWEEK), San Francisco (CA, USA).
- In 2009, *EWSN/CONET Best Ph.D. Thesis Award*, given at European Conference on Wireless Sensor Networks (EWSN), Cork (Ireland).
- In 2007, *Best Demonstration Award* at ACM International Conference on Networked Embedded Sensor Systems (SENSYS), Sydney (Australia).
- In 2012, *Best Paper Runner-up* at ACM/IEEE International Conference on Information Processing in Wireless Sensor Networks (IPSN/IP - part of CPSWEEK), Beijing (China).
- In 2009, *Best Paper Candidate* at IEEE International Symposium on Reliable Distributed Systems (SRDS), Niagara Falls (NY, USA).
- In 2009, recipient of *ERCIM Alain Bensoussan Fellowship* for the same year.
- In 2005, recipient of *Ph.D. scholarship* granted by Italian Ministry of Education, University and Research by ranking first among the Ph.D. applicants at Politecnico di Milano (Italy).
- In 2004, selected among the best 30 European students in Computer Science for the *1<sup>th</sup> IBM Top EMEA Student Recognition Event*, Nice (France).

## Funded Projects

Luca Mottola is or was deeply involved in the following funded projects:

- *Swedish SSF Implicit Smart Interaction* (€3mln over three years, co-applicant): to implement novel interaction paradigms with IoT systems (€250K allocated to the research unit).
- *Google Faculty Award* (€30K over one year, only applicant): to study programming techniques for energy-neutral devices.
- *National Technology Cluster "Smart Living Technologies" (SHELL)* (€1.2mln over 3.5 years, co-applicant): to improve life environments through embedded ICT (€180K allocated to the research unit).
- *National Technology Cluster "ICT Solutions to Support Logistics and Transport Processes" (ITS)* (€1.1mln over 3 years, co-applicant): to explore intelligent transportation systems (€250K allocated to the research unit).
- *National Technology Cluster "Zero-energy Buildings in Smart Urban Districts" (EEB)* (€1.2mln over 3.5 years, co-applicant): to improve smart-building technologies (€190K allocated to the research unit).
- *EU FP7 STREP RelyOnIT* (€1.7mln over 2.5 years, co-applicant): for increasing the reliability of wireless sensor networks against adverse environmental factors (€260K allocated to the research unit).
- *EU FP7 STREP makeSense* (€1.8mln over 3 years, co-applicant and WP leader): for simplifying both the programming of wireless sensor networks and their integration with business processes (€620K allocated to the research unit).
- *EU FP7 NoE CONET* (€4mln over 4 years, cluster leader): for building a community of top researchers in cooperating objects.
- *EU FP6 IP RUNES* (€6.5mln over 3 years) for the development of a highly reconfigurable hardware/software architecture for networked embedded systems.
- *VINNOVA-Sweden STRUCT* (€0.5mln over 3 years, co-applicant): for structural health monitoring using networked embedded systems, with a specific focus on railway bridges.
- *SSF-Sweden PROMOS* (€1mln over 5 years) for simplifying the programming of wireless sensor networks in storage-centric settings.
- *Trento Province TRITon* (€2mln over 3 years) for advancing the state of the art in monitoring and management of road tunnels, using wireless sensor networks.

## Community Service

Luca is Associate Editor for ACM Transactions on Sensor Networks (TOSN), and was PC co-chair for the 2017 edition of the ACM International Conference on Networked Sensor Systems (SENSYS), PC co-chair for the 2017 edition of the ACM International Conference on Embedded Wireless Systems and Networks (EWSN), PC co-chair for the 2015 edition of the IEEE International Conference on Distributed Computing on Sensor Systems (DCOSS), PC co-chair for the 2017 edition of the ACM Workshop on Micro Aerial Vehicle Networks, Systems, and Applications for Civilian Use (DRONET), track chair for the 2017 edition of the IEEE International Conference on Computer Communication and Networks (ICCCN), part of the steering committee of the International Workshop on Software Engineering for Sensor Network Applications (SESENA), and was selected as a panel member of the Informatics Europe Curriculum Award in 2012.

He routinely participates in the program committees of top conferences in WSNs, CPSs, IoT, and closely related fields, including the ACM International Conference on Mobile Systems, Applications, and Services (MOBISYS), the ACM International Conference on Networked Sensor Systems (SENSYS), the ACM/IEEE International Conference on Information Processing in Sensor Networks (IPSN - part of CPSWEEK), the IEEE International Conference on Distributed Computing Systems (ICDCS), the IEEE International Conference on Computer Communications (INFOCOM), the IEEE International Real-time Systems Symposium (RTSS), the IEEE International Conference on Pervasive Computing and Communications (Percom), the IEEE International Conference on Distributed Computing on Sensor Systems (DCOSS), IEEE the International Symposium on Reliable Distributed Systems (SRDS), and the ACM International Conference on Embedded Wireless Systems and Networks (EWSN).

Associate editor:

- From 2016 to date, *ACM Transactions on Sensor Networks (TOSN)*.

Steering committee member:

- From 2012 until 2014, *International Workshop on Software Engineering for Sensor Network Applications (SESENA)* - colocated with ACM/IEEE ICSE).

General chair/co-chair:

- 5<sup>nd</sup> *International Workshop on Real-world Wireless Sensor Networks (REALWSN13)*.

Guest editor:

- *IEEE Internet Computing Magazine - Special Issue on Building Internet of Things Software, 2014*.

Program chair/co-chair:

- 15<sup>th</sup> *ACM International Conference on Networked Sensor Systems (SENSYS17)*.
- 13<sup>th</sup> *ACM International Conference on Embedded Wireless Systems and Networks (EWSN17)*.
- 3<sup>rd</sup> *ACM International Workshop on Micro Aerial Vehicle Networks, Systems, and Applications for Civilian Use (DRONET17)*.
- 11<sup>st</sup> *International Conference on Distributed Computing on Sensor Systems (DCOSS15)*.
- 2<sup>nd</sup> *International Workshop on Robotic Sensor Networks (ROBOSENSOR15 - part of CPSWEEK)*.
- 1<sup>st</sup> *International Workshop on Robotic Sensor Networks (ROBOSENSOR14 - part of CPSWEEK)*.
- 2<sup>nd</sup> *International Workshop on Software Engineering for Sensor Network Applications (SESENA11 - colocated with ACM/IEEE ICSE11)*.
- 8<sup>th</sup> *International Extended Semantic Web Conference - Sensor Web Track (ESWC11)*.

Track chair/co-chair:

- 26<sup>th</sup> *International Conference on Computer Communication and Networks - Embedded Networks and Pervasive Computing Track (ICCCN17)*.
- 8<sup>th</sup> *International Extended Semantic Web Conference - Sensor Web Track (ESWC11)*.

Program committee member:

- 3<sup>rd</sup> *NASA/ESA Conference on Adaptive Hardware and Systems (AHS17)*.
- 37<sup>th</sup> *IEEE International Conference on Computer Communications (INFOCOM18)*.
- 13<sup>rd</sup> *IEEE International Conference on Distributed Computing in Sensor Systems (DCOSS17)*.
- 37<sup>th</sup> *IEEE International Conference on Distributed Computing Systems (ICDCS17)*.
- 15<sup>th</sup> *ACM International Conference on Mobile Systems, Applications, and Services (MOBISYS17)*.
- 16<sup>th</sup> *ACM/IEEE International Conference on Information Processing in Sensor Networks (IPSN17 - part of CPSWEEK)*.
- 4<sup>th</sup> *International Workshop on Energy Harvesting & Energy Neutral Sensing Systems (ENSsys - colocated with ACM SENSYS16)*.
- 8<sup>th</sup> *International Conference on Mobile Computing, Applications, and Services (MOBICASE16)*.
- 15<sup>th</sup> *ACM/IEEE International Conference on Information Processing in Sensor Networks (IPSN16 - part of CPSWEEK)*.
- 36<sup>th</sup> *IEEE International Conference on Computer Communications (INFOCOM17)*.
- 2<sup>nd</sup> *International Workshop on Micro Aerial Vehicle Networks, Systems, and Applications for Civilian Use (DRONET16 - colocated with ACM MOBISYS)*.
- 12<sup>nd</sup> *IEEE International Conference on Distributed Computing in Sensor Systems (DCOSS16)*.
- 14<sup>th</sup> *ACM International Conference on Networked Sensor Systems (SENSYS16)*.
- 13<sup>th</sup> *ACM International Conference on Embedded Wireless Systems and Networks (EWSN16)*.
- 35<sup>th</sup> *IEEE International Conference on Computer Communications (INFOCOM16)*.
- 14<sup>th</sup> *International Conference on Pervasive Computing and Communications (PERCOM16)*.
- 13<sup>th</sup> *ACM International Conference on Networked Sensor Systems (SENSYS15)*.
- 1<sup>st</sup> *International Workshop on Internet of Things towards Applications (colocated with ACM SENSYS) (IoT-App15)*.
- 34<sup>th</sup> *IEEE International Symposium on Reliable Distributed Systems (SRDS15)*.
- 7<sup>th</sup> *Asia-Pacific Symposium on Internetworking (INTERNETWARE15)*.
- 11<sup>th</sup> *International Symposium on Algorithms and Experiments for Wireless Sensor Networks (ALGOSENSORS15)*.
- 12<sup>nd</sup> *IEEE International Conference on Mobile Ad-hoc and Sensor Systems (MASS15)*.
- 1<sup>st</sup> *International Workshop on Smart Cities and Urban Informatics (SmartCity15 - colocated with IEEE INFOCOM)*.
- 1<sup>st</sup> *International Workshop on Micro Aerial Vehicle Networks, Systems, and Applications for Civilian Use (DRONET15 - colocated with ACM MOBISYS)*.
- 10<sup>th</sup> *Joint Meeting of the European Software Engineering Conference and the ACM SIGSOFT Symposium on the Foundations of Software Engineering - New ideas track (ESEC/FSE15)*.
- 10<sup>th</sup> *Joint Meeting of the European Software Engineering Conference and the ACM SIGSOFT Symposium on the Foundations of Software Engineering - Tools track (ESEC/FSE15)*.
- 7<sup>th</sup> *International Workshop on Adaptive and Reconfigurable Embedded Systems (APRES15)*.
- 1<sup>st</sup> *NASA/ESA Conference on Adaptive Hardware and Systems (AHS15)*.

- 35<sup>th</sup> IEEE International Conference on Distributed Computing Systems (ICDCS15).
- 11<sup>th</sup> International Conference on Mobile and Ubiquitous Systems (MOBIQUITOUS15).
- 13<sup>th</sup> International Conference on Pervasive Computing and Communications (PERCOM15).
- 35<sup>th</sup> IEEE Real-time Systems Symposium (RTSS14).
- 10<sup>th</sup> International Workshop on Wireless Network Measurements and Experimentation (WiNMe14).
- 11<sup>st</sup> IEEE International Conference on Mobile Ad-hoc and Sensor Systems (MASS14).
- 33<sup>rd</sup> IEEE International Symposium on Reliable Distributed Systems (SRDS14).
- 10<sup>th</sup> IEEE International Conference on Distributed Computing in Sensor Systems (DCOSS14).
- 12<sup>th</sup> International Conference on Pervasive Computing and Communications (PERCOM14).
- 13<sup>rd</sup> ACM/IEEE International Conference on Information Processing in Sensor Networks (IPSN14 - part of CPSWEEK).
- 34<sup>th</sup> IEEE International Conference on Distributed Computing Systems (ICDCS14).
- 11<sup>st</sup> European Conference on Wireless Sensor Networks (EWSN14).
- 34<sup>th</sup> IEEE Real-time Systems Symposium (RTSS13).
- 38<sup>th</sup> IEEE International Conference on Local Computer Networks (LCN13).
- 10<sup>th</sup> IEEE International Conference on Mobile Ad-hoc and Sensor Systems (MASS13).
- 6<sup>th</sup> Interaction and Concurrency Experience Workshop (ICE13).
- 9<sup>th</sup> Joint Meeting of the European Software Engineering Conference and the ACM SIGSOFT Symposium on the Foundations of Software Engineering - Tools track (ESEC/FSE13).
- 11<sup>th</sup> ACM International Conference on Networked Sensor Systems (SENSYS13).
- 2<sup>nd</sup> on Data-intensive Process Management in Large-Scale Sensor Systems: From Sensor Networks to Sensor Clouds (DPMSS13 - colocated with CCGrid13).
- 4<sup>th</sup> International Workshop on Networks of Cooperating Objects (CONET13 - part of CPSWEEK).
- 9<sup>th</sup> IEEE International Conference on Distributed Computing in Sensor Systems (DCOSS13).
- 12<sup>nd</sup> ACM/IEEE International Conference on Information Processing in Sensor Networks (IPSN13 - part of CPSWEEK).
- 11<sup>st</sup> International Conference on Pervasive Computing and Communications (PERCOM13).
- 3<sup>rd</sup> IEEE International Conference on Networked Embedded Systems for Enterprise Applications (NESEA12).
- 1<sup>st</sup> International Workshop on Sustainable Monitoring through Cyber-physical Systems (SUMO-CPS13).
- 10<sup>th</sup> European Conference on Wireless Sensor Networks (EWSN13).
- Informatics Europe Curriculum Award - curricula initiatives in Embedded and Mobile Computing, 2012.
- 3<sup>rd</sup> International Conference on Internet of Things for Industry and Academia (IOT12).
- 3<sup>rd</sup> IEEE International Conference on Cyber, Physical and Social Computing (CPSCOM12).
- 37<sup>th</sup> IEEE International Conference on Local Computer Networks (LCN12).
- 11<sup>st</sup> International Workshop on Real Time Networks (RTN12).
- 7<sup>th</sup> IEEE International Workshop on Practical Issues in Building Sensor Network Applications (SENSEAPP12).
- 3<sup>rd</sup> International Workshop on Software Engineering for Sensor Network Applications (SESENA12 - colocated with ACM/IEEE ICSE12).
- 10<sup>th</sup> ACM International Conference on Networked Sensor Systems (SENSYS12).
- 3<sup>rd</sup> International Workshop on Networks of Cooperating Objects (CONET12 - part of CPSWEEK).
- 1<sup>st</sup> on Data-intensive Process Management in Large-Scale Sensor Systems: From Sensor Networks to Sensor Clouds (DPMSS12 - colocated with CCGrid12).
- 9<sup>th</sup> European Conference on Wireless Sensor Networks (EWSN12).
- 4<sup>th</sup> International Workshop on Information Quality and Quality of Service for Pervasive Computing (IQ2S12).
- 11<sup>nd</sup> ACM/IEEE International Conference on Information Processing in Sensor Networks (IPSN12 - part of CPSWEEK).
- 6<sup>th</sup> International Workshop on Middleware Tools, Services and Run-Time Support for Sensor Networks (MID-SENS11).
- 7<sup>th</sup> IEEE International Conference on Distributed Computing in Sensor Systems (DCOSS11).
- 2<sup>nd</sup> IEEE International Conference on Networked Embedded Systems for Enterprise Applications (NESEA11).
- 32<sup>nd</sup> International Conference on Architecture of Computer Systems (ARCS12).
- 36<sup>th</sup> IEEE International Conference on Local Computer Networks (LCN11).
- 6<sup>th</sup> IEEE International Workshop on Practical Issues in Building Sensor Network Applications (SENSEAPP11).
- 10<sup>th</sup> International Workshop on Real Time Networks (RTN11).
- 14<sup>th</sup> Euromicro Conference on Digital System Design—Special Session on Wireless Sensor Networks (DSD11).
- 9<sup>th</sup> ACM International Conference on Networked Sensor Systems (SENSYS11).
- 10<sup>th</sup> ACM/IEEE International Conference on Information Processing in Sensor Networks (IPSN11 - part of CPSWEEK).
- 31<sup>st</sup> IEEE International Conference on Distributed Computing Systems (ICDCS11).
- 9<sup>th</sup> Ph.D. Forum at the International Conference on Pervasive Computing and Communications (PERCOM11).
- 35<sup>th</sup> IEEE International Conference on Local Computer Networks (LCN10).
- 5<sup>th</sup> International Workshop on Middleware Tools, Services and Run-Time Support for Sensor Networks (MID-

SENS10).

- 29<sup>th</sup> IEEE International Symposium on Reliable Distributed Systems (SRDS10).
- 13<sup>th</sup> Euromicro Conference on Digital System Design—Special Session on Wireless Sensor Networks (DSD10).
- 1<sup>st</sup> International Workshop on Networks of Cooperating Objects (CONET10 - part of CPSWEEK).
- 5<sup>th</sup> IEEE International Workshop on Practical Issues in Building Sensor Network Applications (SENSEAPP10).
- 72<sup>nd</sup> IEEE Vehicular Technology Conference (VTC Fall 2010).
- 2<sup>th</sup> International Conference on Ad-hoc Networks (AdHocNets10).
- 6<sup>th</sup> IEEE International Conference on Distributed Computing in Sensor Systems (DCOSS10).
- 9<sup>th</sup> International Workshop on Real Time Networks (RTN10).
- 3<sup>rd</sup> Wireless Sensing Demonstrator Showcase (WSDS10).
- 1<sup>st</sup> International Workshop on Software Engineering for Sensor Network Applications (SESENA10 - colocated with ACM/IEEE ICSE10).
- 3<sup>rd</sup> IEEE International Conference on Sensor Networks, Ubiquitous, and Trustworthy Computing (SUTC10).
- 9<sup>th</sup> ACM/IEEE International Conference on Information Processing in Sensor Networks (IPSN10 - part of CPSWEEK).
- 7<sup>th</sup> European Conference on Wireless Sensor Networks (EWSN10).
- 34<sup>th</sup> IEEE International Conference on Local Computer Networks (LCN09).
- 4<sup>th</sup> International Workshop on Middleware Tools, Services and Run-Time Support for Sensor Networks (MIDSENS09).
- 8<sup>th</sup> International Workshop on Real Time Networks (RTN09).
- 1<sup>st</sup> International Workshop on Middleware for Sensing and Actuation Augmented Pervasive Systems (MSAPS09).
- 2<sup>nd</sup> Wireless Sensing Demonstrator Showcase (WSDS09).
- 4<sup>th</sup> IEEE International Workshop on Practical Issues in Building Sensor Network Applications (SENSEAPP09).
- 1<sup>st</sup> International Conference on Sensor Networks Applications, Experimentation and Logistics (SENSAPPEAL09).
- 1<sup>st</sup> International Workshop on Protocols and Algorithms for Reliable and Data Intensive Sensor Networks (PARIS07) - colocated with IEEE MASS07).

Demonstration/poster chair:

- 13<sup>th</sup> ACM International Conference on Embedded Wireless Systems and Networks (EWSN16).
- 11<sup>th</sup> International Conference on Mobile and Ubiquitous Systems (MOBIQUITOUS15).
- 11<sup>st</sup> ACM International Conference on Networked Sensor Systems (SENSYS13).
- 12<sup>nd</sup> ACM/IEEE International Conference on Information Processing in Sensor Networks (IPSN13 - part of CPSWEEK).
- 8<sup>th</sup> European Conference on Wireless Sensor Networks (EWSN11).

Panel member:

- 15<sup>th</sup> Ph.D Forum at the ACM/IEEE International Conference on Information Processing in Sensor Networks (IPSN16 - part of CPSWEEK).
- 13<sup>rd</sup> Ph.D Forum at the ACM/IEEE International Conference on Information Processing in Sensor Networks (IPSN14 - part of CPSWEEK).
- 11<sup>st</sup> Ph.D. Colloquia at the ACM International Conference on Embedded Networked Sensor Systems (SENSYS13).
- 10<sup>th</sup> Ph.D. Colloquia at the ACM International Conference on Embedded Networked Sensor Systems (SENSYS12).
- 9<sup>th</sup> Ph.D. Forum at the IEEE International Conference on Pervasive Computing and Communications (PERCOM11).

School organization and direction:

- The 1<sup>st</sup> Idea League Doctoral School on “Transiently Powered Computing”, 2017.
- The 3<sup>rd</sup> CONET Summer School “Networked Embedded Systems: Humans in the Loop”, 2011.

Organization committee:

- Co-organizer: International Ph.D. Forum on Sensor Networking Research at IPSN 2016 (colocated with IPSN16 at CPSWEEK).
- Co-organizer: International Ph.D. Colloquium on Sensor Networking Research at SENSYS 2014.
- Co-organizer: International Ph.D. Forum on Sensor Networking Research at IPSN 2012 (colocated with IPSN12 at CPSWEEK).
- Publicity chair of the 11<sup>th</sup> ACM/IEEE International Conference on Information Processing in Sensor Networks (IPSN12 - colocated with CPSWEEK).
- Publication chair of the 4<sup>th</sup> International Workshop on Real-world Wireless Sensor Networks (REALWSN10).
- Publicity chair of the 10<sup>th</sup> European Conference on Wireless Sensor Networks (EWSN13).
- Sponsorship chair of the 8<sup>th</sup> International Conference on Embedded Networked Sensor Systems (SENSYS10).
- Local chair of the 1<sup>st</sup> International Workshop on Networks of Cooperating Objects (CONET10 - colocated with CPSWEEK10).
- Publication chair of the 1<sup>st</sup> International Conference on Sensor Systems and Software (S-CUBE09).

## Talks

### Keynote Speeches

- “Real-world Drone Sensor Networks: A Multi-disciplinary Challenge”, at the 6<sup>th</sup> International Real-world Wireless Sensor Networks Workshop (REALWSN), Seoul (Korea), November 2015.
- “The Mote is Dead, Long Live the Mote!”, at the 4<sup>th</sup> International Conference on Sensor Systems and Software (S-CUBE), Lucca (Italy), June 2013.
- “Monitoring Heritage Buildings with Wireless Sensor Networks: The Torre Aquila Deployment”, at the 2<sup>nd</sup> Wireless Sensing Demonstrator Showcase, London (UK), July 2009.

### Sensor Network Programming Tutorials

Luca’s tutorial on sensor network programming, largely based on his Ph.D. thesis [83] and the corresponding survey paper [12], attracted more than 200 attendees among researchers, students, and practitioners. The tutorial has been presented at major scientific venues, schools, and graduate courses, including:

- the 33<sup>rd</sup> ACM SIGPLAN International Conference on Programming Language Design and Implementation (PLDI - colocated with ECOOP, LCTES, ISMM and APPLC), held in Beijing (China), June 2012.
- the 3<sup>rd</sup> Cyberphysical Systems week (CPSWEEK) held in Stockholm (Sweden), April 2010.
- the 1<sup>st</sup> International School on Cyberphysical and Sensor Networks (SensorNets), held in Monastir (Tunisia), December 2009.
- the 6<sup>th</sup> European Wireless Sensor Network Conference (EWSN), Cork (Ireland), February 2009.
- the 7<sup>th</sup> ACM/USENIX International Middleware Conference, held in Leuven (Belgium), December 2008.
- the 1<sup>st</sup> GII doctoral school in Computer Engineering, held in L’Aquila (Italy), September 2008.

### Cyberphysical Systems Tutorials

Luca’s tutorial on Cyberphysical System Software has been presented at:

- the 22<sup>nd</sup> ACM SIGSOFT International Symposium on Foundations of Software Engineering (FSE), Hong Kong (China), November 2014.

### Invited Talks

- “Internet of Things Research...What?”, public talk at the Next Generation Internet of Things Workshop, University of Southern California, host Prof. Bhaskar Krishnamakhari, Los Angeles (US), March 2016.
- “Re-thinking the Low-power Wireless Stack”, public talk at Graz University of Technology, host Prof. Kay Roemer, Graz (Austria), February 2015.
- “Team-level Programming of Drone Sensor Networks”, public talk at Graz University of Technology, host Prof. Kay Roemer, Graz (Austria), January 2015.
- “Engineering Cyberphysical System Software”, public talk at Peking University, host Dr. Zhi Jin, Beijing (China), January 2014.
- “Spatio-temporal Programming of Multiple Coordinating Aerial Drones”, public talk at Uppsala University, host Prof. Per Gunningberg, Uppsala (Sweden), December 2013.
- “Spatio-temporal Programming of Sensing and Actuating Multi-robot Systems”, public talk at ETH Zürich, host Prof. Lothar Thiele, Zürich (Switzerland), October 2013.
- “Low-power Wireless Bus”, Microsoft Research Asia Workshop on Hot Topics in Sensor Networks, Beijing (China), April 2012.
- “Developing Software for the Internet of Things: Challenges and Opportunities”, the 1<sup>st</sup> ERC Workshop on Software Quality, Venice (Italy), September 2011.
- “Bullet-proof Software Development for Networked Embedded Systems: Dream or (Future) Reality?”, the 3<sup>rd</sup> International CONET Summer School from Sensor Networks to Networked Intelligent Objects, Bertinoro (Italy), July 2011.
- “Programming Sensor Networks: from Abstractions to Running (Correct) Code”, guest lecture in the graduate course on “Advanced Topics in Software Engineering” at Politecnico di Milano (Italy), May 2011.
- “An Overview on State of The Art of Wireless Sensor Networks”, guest lecture in the graduate course on “Data Communication Networks III” at Uppsala University, Uppsala (Sweden), April 2011.
- “An Overview on State of The Art and Real-World Deployments of Wireless Sensor Networks”, guest lecture in the graduate course on “Distributed Information Systems” at Uppsala University, Uppsala (Sweden), November 2010.



- “An Overview on State of The Art of Wireless Sensor Networks”, guest lecture in the graduate course on “Data Communication Networks III” at Uppsala University, Uppsala (Sweden), April 2010.
- “Real-World Applications of WSN and RFID systems”, the 1<sup>st</sup> International School on Cyber-Physical and Sensor Networks (SensorNets), Monastir (Tunisia), December 2009.
- “An Overview on State of The Art and Real-World Deployments of Wireless Sensor Networks”, guest lecture in the graduate course on “Distributed Information Systems” at Uppsala University, Uppsala (Sweden), December 2009.
- “WSN Programming: From Abstractions to Running Code”, guest lecture in the graduate course on “Principles of Wireless Sensor Networks” at Kungliga Tekniska Högskolan (KTH), Stockholm (Sweden), September 2009.
- “Operating Systems for Networked Embedded Devices”, the 1<sup>st</sup> International CONET Summer School from Sensor Networks to Networked Intelligent Objects, Bertinoro (Italy), July 2009.
- “Real-World Deployments of WSN Applications”, the 1<sup>st</sup> International CONET Summer School from Sensor Networks to Cooperating Objects, Bertinoro (Italy), July 2009.
- “WSN Programming Abstractions: Five Reasons for a Bottom-Up Approach”, the International WASP/-CONET Workshop, Darmstadt (Germany), March 2009.
- “A Short Introduction to Contiki Operating System”, public talk at University College London, host Prof. Yang Yang, London (UK), February 2009.
- “Monitoring Heritage Buildings with Wireless Sensor Networks: The Torre Aquila Deployment”, public talk at University College London, host Prof. Yang Yang, London (UK), February 2009.
- “Monitoring Heritage Buildings with Wireless Sensor Networks: The Torre Aquila Deployment”, public talk at ETH Zürich, host Dr. Kay Roemer, Zürich (Switzerland), January 2009.
- “Moving WSN Programming Abstractions into the Real World”, public talk at University of Cambridge, host Dr. Cecilia Mascolo, Cambridge (UK), August 2008.
- “Moving WSN Programming Abstractions into the Real World”, public talk at University of Warwick, host Dr. Arshad Jhumka, Warwick (UK), August 2008.
- “Programming Wireless Sensor Networks: From Physical to Logical Neighborhoods”, public talk at University College London, host Dr. Cecilia Mascolo, London (UK), February 2008.
- “Virtual Nodes: Abstracting Physical Devices in Wireless Sensor Networks”, the Italian Software Engineering Days 2007, host Prof. Carlo Ghezzi, Como (Italy), September 2007.
- “Scoping in Sensor Networks: from Programming Abstractions to Routing”, public talk at University of Southern California, host Prof. Viktor K. Prasanna, Los Angeles (CA, USA), September 2006.
- “Logical Neighborhoods: A Programming Abstraction for Wireless Sensor Networks”, the 1<sup>st</sup> International Summer School on Wireless Sensor Networks (selected as student presentation of ongoing research), Ottawa (Canada), August 2006.
- “Logical Neighborhoods: A Programming Abstraction for Wireless Sensor Networks”, public talk at ETH Zürich, host Dr. Kay Roemer, Zürich (Switzerland), May 2006.

## Conference Talks

- “Reactive Control of Autonomous Drones”, the ACM International Conference on Mobile Systems, Applications, and Services (ACM MOBISYS), Singapore, June 2016.
- “Model-based Real-time Testing of Drone Autopilots”, the ACM International Workshop on Micro Aerial Vehicle Networks, Systems, and Applications for Civilian Use (DRONET - colocated with ACM MOBISYS), Singapore, June 2016.
- “Virtual Resources for the Internet of Things”, World Forum on Internet of Things (WF-IoT), Milano (Italy), December 2015.
- “Team-level Programming of Drone Sensor Networks”, the 12<sup>th</sup> International Conference on Embedded Networked Sensor Systems (SENSYS), Memphis (TN, USA), November 2014.
- “Context-oriented Programming for Adaptive Wireless Sensor Network Software”, the 10<sup>th</sup> International Conference on Distributed Computing on Sensor Systems (DCOSS), Los Angeles (CA, USA), June 2014.
- “Electronically-switched Directional Antennas for Wireless Sensor Networks: A Full-stack Evaluation”, the 10<sup>th</sup> International Conference on Sensing, Communication, and Networking (SECON), New Orleans (LO, USA), June 2013.
- “Evaluation of an Electronically Switched Directional Antenna for Real-world Low-power Wireless Networks”, the 4<sup>th</sup> International Workshop on Real-world Wireless Sensor Networks (REALWSN), Colombo (Sri Lanka), December 2010.
- “Anquiro: Efficient Static Verification of Sensor Network Software”, the 1<sup>st</sup> International Workshop on Software Engineering for Sensor Networks (SESENA - colocated with ACM/IEEE ICSE), Cape Town (South Africa), May 2010.
- “Programming Storage-centric Sensor Networks with Squirrel”, the 9<sup>th</sup> ACM/IEEE International Conference on Information Processing in Sensor Networks (IPSN/IP - part of CPSWEEK), Stockholm (Sweden),

April 2010.

- “On Consistent Neighborhood Views in Wireless Sensor Networks”, the 28<sup>th</sup> IEEE International Symposium on Reliable Distributed Systems (SRDS), Niagara Falls (NY, USA), September 2009.
- “Monitoring Heritage Buildings with Wireless Sensor Networks: The Torre Aquila Deployment”, the 8<sup>th</sup> ACM/IEEE International Conference on Information Processing in Sensor Networks (IPSN/SPOTS - part of CPSWEEK), San Francisco (CA, USA), April 2009. Recipient of the *Best Paper Award*.
- “FiGaRo: Fine-Grained Software Reconfiguration in Wireless Sensor Networks”, the 5<sup>th</sup> European Conference on Wireless Sensor Networks (EWSN), Bologna (Italy), January 2008.
- “Programming Wireless Sensor Networks with The TeenyLIME Middleware”, the 6<sup>th</sup> ACM/USENIX International Middleware Conference, Newportbeach (CA, USA), November 2007.
- “Programming Wireless Sensor Networks with Logical Neighborhoods: A Road Tunnel Use Case”, public demonstration at the 5<sup>th</sup> ACM International Conference on Embedded Networked Sensor Systems (SENSYS07), Sydney (Australia), November 2007. Recipient of the *Best Demo Award*.
- “Enabling Scope-Based Interactions in Sensor Network Macro-programming”, the 4<sup>th</sup> IEEE International Conference on Mobile Ad-hoc and Sensor Systems (MASS07), Pisa (Italy), October 2007.
- “Playing with Time in Publish-Subscribe using a Domain-Specific Model Checker”, the 6<sup>th</sup> International Workshop on Specification and Verification of Component-Based Systems (SAVCBS07 - colocated with ACM ESEC), Dubrovnik (Croatia), September 2007.
- “On Accurate Automatic Verification of Publish-Subscribe Architectures”, the 29<sup>th</sup> ACM/IEEE International Conference on Software Engineering (ICSE07), Minneapolis (MN, USA), May 2007.
- “The RUNES Middleware and its Application in a Disaster Management Scenario”, the 5<sup>th</sup> IEEE International Conference on Pervasive Computing and Communications (PERCOM07), New York (NY, USA), March 2007.
- “Using Logical Neighborhoods to Enable Scoping in Wireless Sensor Networks”, the 3<sup>rd</sup> ACM International Middleware Doctoral Symposium (MDS06 - colocated with ACM/USENIX Middleware), Melbourne (Australia), December 2006.
- “Pervasive Games in a Mote-Enabled Virtual World Using Tuple Space Middleware”, the 5<sup>th</sup> ACM International Workshop on Network & System Support for Games (NETGAMES06), Singapore, November 2006.
- “Lightweight Information Dissemination in Inter-Vehicular Networks”, the 3<sup>rd</sup> International Workshop on Vehicular Ad-hoc Networks (VANET06 - colocated with ACM MOBICOM), Los Angeles (CA, USA), September 2006
- “Logical Neighborhoods: A Programming Abstraction for Wireless Sensor Networks”, the 2<sup>nd</sup> IEEE International Conference on Distributed Computing in Sensor Systems (DCOSS06), San Francisco (CA, USA), June 2006.
- “Logical Neighborhoods: A Programming Abstraction for Wireless Sensor Networks”, the 1<sup>st</sup> International Conference on Integrated Internet Ad-hoc and Sensor Networks (INTERSENSE06), Nice (France), May 2006.

## General Public Talks

The following are public talks given to a non-technical audience in the occasion of public events:

- “Internet of Things and Smart Agriculture: What’s next?” (in Italian), invited talk at the Universal Exhibition ([www.expo2015.org](http://www.expo2015.org)) in Milano, September 2015.
- “Storia di una Torre che Respira” (in Italian), invited talk at the concluding event of the seminar series “La ricerca Improbabile” in occasion of the 150th anniversary of Politecnico di Milano, Piccolo Teatro Studio - Milano, June 2013.
- “Meet the Tower That Breathes!”, invited talk at the ERCIM *Cor Bayeen Award* ceremony, Berlin, November 2011.

## Teaching Activities

### Ph.D. Supervision

- 2014-present: *Naveed Bhatti*, Politecnico di Milano (Italy). Thesis topic: “System Architecture Directions for Perpetual Sensing”, expected graduation beginning 2018.
- 2012-present: *Ambuj Varshney*, Uppsala University (Sweden), co-advised with Thiemo Voigt. Thesis topic: “Low-power Wireless Networking with Directional Antennas”, expected graduation end of 2017.
- 2012-2016: *Mikhail Afanasov*, Politecnico di Milano (Italy). Thesis topic: “Software-level Adaptation in Cyberphysical Systems”.

## Ph.D. Defenses

- Sain Saginbekov, Warwick University, viva defense January 2014. Thesis: “Efficient and Reliable Communication in Wireless Sensor Networks”. Main examiner.
- Hjalmar Wennerström, Uppsala University, licentiate graduation December 2013. Thesis: “Environmental Effects and Transmission Errors in Outdoor Wireless Sensor Networks”. Main opponent.
- Federico Ferrari, ETH Zürich, graduated October 2013. Thesis: “Enabling Dependable Communication in Cyber-Physical Systems with a Wireless Bus”. Co-examiner.

## M.Sc. and B.Sc. Thesis Supervision

- K. Dolui, *Cloud Platforms for the Internet of Things: How Do They Stack Up in a Real-world Application?*, Master Thesis, Politecnico di Milano (Italy), 2016.
- N. Casamassima, *Reactive Programming for Resource-limited devices*, Master Thesis, Politecnico di Milano (Italy), 2016.
- D. Cantoni, *System Support for Internet-connected Drones*, Master Thesis, Politecnico di Milano (Italy), 2015.
- A. Patelli, *Model-based Testing of Aerial Drones Control Firmwares*, Master Thesis, Politecnico di Milano (Italy), 2015.
- E. Bregu, *Re-engineering of Aerial Drone Autopilot Firmware with Reactive Programming*, Master Thesis, Politecnico di Milano (Italy), 2015.
- M. Belgioioso and A. Cardellini, *Programming of Sensing and Actuating Micro-drone Teams*, Master Thesis, Politecnico di Milano (Italy), 2015.
- T. Brucker Kambo, *CoAP Interfaces for Low-level Aerial Drone Control*, Master Thesis, Politecnico di Milano (Italy), 2014.
- M. Moretta, *Towards Service-oriented Interfaces for Aerial Drones*, Master Thesis, Politecnico di Milano (Italy), 2014.
- D. Nigatu Mitiku and M. Esayas Getachew, *Data Processing Algorithms in Wireless Sensor Networks for Structural Health Monitoring*, Master Thesis, Swedish Institute of Computer Science and Blekinge Tekniska Hogskola (BTH) (Sweden), 2011.
- V. Marioli, *Towards Virtual Synchrony in Wireless Sensor Networks*, Master Thesis, Swedish Institute of Computer Science and University of Pisa (Italy), 2011.
- B. Silase Geletu, *Modelling an Electronically Switchable Directional Antenna for Wireless Sensor Networks*, Master Thesis, Swedish Institute of Computer Science and Blekinge Tekniska Hogskola (BTH) (Sweden), 2010.
- C. Olsson, *Programming Disconnected Operations in Wireless Sensor Networks*, Master Thesis, Swedish Institute of Computer Science and Kungliga Tekniska Hogskolan (KTH) (Sweden), 2009.
- E. Öström, *Building and Experimentally Evaluating a Smart Antenna for Low-power Wireless Communication*, Master Thesis, Swedish Institute of Computer Science and Mälardalen University (Sweden), 2009.
- M. Zimmerling, *Automatic Parameter Optimization of Sensor Network MAC Protocols*, Master Thesis (co-supervised with Thiemo Voigt), Swedish Institute of Computer Science and Technische Universität Dresden (Germany), 2009. *Best M.Sc. Thesis Award* at the 1<sup>st</sup> International School on Cyber-Physical and Sensor Networks (SensorNets), Monastir (Tunisia), December 2009.
- F. Pompermaier, *Accurate Estimation of Residual Lifetime in WSNs*, Master Thesis, University of Trento (Italy), 2008.
- G. Khasanova, *High-level Programming of WSNs Using Distributed Abstract Data Types*, Master Thesis, University of Trento (Italy), 2008.
- E. Bisoffi, *Understanding Over-the-air Reprogramming in WSNs: A Case Study with the Deluge Protocol*, Master Thesis, University of Trento (Italy), 2008.
- C. Benoni, *Time Synchronization for the TeenyLIME Middleware*, Bachelor Thesis, University of Trento (Italy), 2007.
- A. Amjad, *Routing for Fine-Grained Code Deployment in Sensor Networks*, Master Thesis, University of Trento (Italy), 2007.
- G. Pedrazza, *A Comparative Analysis of MANETs Simulators*, Master Thesis, Politecnico di Milano (Italy), 2007.
- G. Gerosa, *Analyzing Temporal Aspects in the Automated Verification of Publish-Subscribe Architectures*, Master Thesis, Politecnico di Milano (Italy), 2007.
- A. Ungari, *Code Deployment in Heterogeneous Wireless Sensor Networks*, Master Thesis, Politecnico di Milano (Italy), 2006.
- P. Ciriello, *Routing to Multiple Sinks in Wireless Sensor Networks*, Master Thesis, Politecnico di Milano, 2006.
- A. Bellema, *Design and Implementation of a Tool for Monitoring Sensor Network Deployments*, Bachelor Thesis, Politecnico di Milano (Italy), 2006.

- G. Turconi and D. Sormani, *Probabilistic Routing in Vehicular Networks*, Bachelor Thesis, Politecnico di Milano (Italy), 2006.

## Courses

Main lecturer for the following courses:

- Spring 2017 - Politecnico di Milano, Italy:
  - *Software Engineering* (undergraduate course).
  - *Final Project* (undergraduate course).
  - *Software Project* (undergraduate course).
  - *Computer Science Fundamentals* (undergraduate course).
- Fall 2016 - Politecnico di Milano, Italy:
  - *Software Engineering II* (graduate course).
- Spring 2016 - Politecnico di Milano, Italy:
  - *Software Engineering* (undergraduate course).
  - *Final Project* (undergraduate course).
  - *Software Project* (undergraduate course).
- Fall 2015 - University of Trento, Italy:
  - *Networked Embedded Software* (Ph.D. course).
- Spring 2015 - Gran Sasso Science Institute (GSSI) International Ph.D. school, Italy:
  - *Networked Embedded Software* (Ph.D. course).
- Spring 2015 - Politecnico di Milano, Italy:
  - *Networked Embedded Software* (Ph.D. course).
- Spring 2015 - Graz University of Technology, Austria:
  - *Networked Embedded Software* (Ph.D. course).
- Fall 2014 - Politecnico di Milano, Italy:
  - *Computer Science Fundamentals* (undergraduate course).
- Spring 2014 - Politecnico di Milano, Italy:
  - *Smart Buildings and Structures: a Cyberphysical System Perspective* (Ph.D. course).
- Spring 2014 - Politecnico di Milano, Italy:
  - *Software Project* (undergraduate course).
- Fall 2013 - Politecnico di Milano, Italy:
  - *Software Engineering II* (graduate course).
- Fall 2012 - Politecnico di Milano, Italy:
  - *Software Engineering II* (graduate course).
- Fall 2010 - Kungliga Tekniska Högskolan (KTH), Sweden:
  - *Programming Wireless Sensor Networks: A System Perspective* (graduate course).
- Spring 2008 - Politecnico di Milano - CEFRIEL, Italy:
  - *Introduction to Middleware* (graduate course).
- Fall 2007 - Politecnico di Milano - CEFRIEL, Italy:
  - *Introduction to Middleware* (graduate course).
- Spring 2007 - Politecnico di Milano - CEFRIEL, Italy:
  - *Introduction to Middleware* (graduate course).

Guest lecturer for the following courses and schools:

- Summer 2011 - Bertinoro, Italy:
  - *International CONET Summer School: Networked Embedded Systems: Humans in the Loop* (school).
- Spring 2011 - Politecnico di Milano, Italy:

- *Advanced Topics in Software Engineering* (graduate course).
- Spring 2011 - Uppsala University, Sweden:
  - *Data Communication Networks III* (graduate course).
- Fall 2010 - Uppsala University, Sweden:
  - *Distributed Information Systems* (undergraduate course).
- Spring 2010 - Uppsala University, Sweden:
  - *Data Communication Networks III* (graduate course).
- Fall 2009 - Monastir, Tunisia:
  - *International School on Cyber-Physical and Sensor Networks (SensorNets)* (school).
- Fall 2009 - Uppsala University, Sweden:
  - *Distributed Information Systems* (undergraduate course).
- Fall 2009 - Kungliga Tekniska Högskolan (KTH), Sweden:
  - *Principles of Wireless Sensor Networks* (graduate course).
- Summer 2009 - Bertinoro, Italy:
  - *International CONET Summer School: from Sensor Networks to Networked Intelligent Objects* (school).
- Fall 2008 - L'Aquila, Italy:
  - *GII Doctoral School in Computer Engineering* (school).

Teaching assistant for the following courses:

- Spring 2008 - University of Trento, Italy:
  - *Programming Wireless Sensor Networks* (in English - Ph.D. course taught by Prof. Gian Pietro Picco).
- Fall 2007 - University of Trento, Italy:
  - *Middleware and Application-Level Protocols* (in English - graduate course taught by Prof. Gian Pietro Picco).
- Fall 2006 - Politecnico di Milano, Italy:
  - *Distributed Computing Systems* (graduate course taught by Prof. Gian Pietro Picco).
  - *Programming Fundamentals I* (undergraduate course taught by Prof. Dino Mandrioli).
- Spring 2006 - Politecnico di Milano, Italy:
  - *Distributed Computing Systems* (in English - graduate course taught by Prof. Gian Pietro Picco).
  - *Theoretical Computer Science I* (undergraduate course taught by Prof. Matteo Pradella).
- Spring 2005 - Politecnico di Milano, Italy:
  - *Theoretical Computer Science I* (undergraduate course taught by Prof. Matteo Pradella).

## Publications<sup>3</sup>

### International Journals

- [1] Marco Zimmerling, Luca Mottola, Pratyush Kumar, Federico Ferrari, and Lothar Thiele. Adaptive Real-time Communication for Wireless Cyber-physical Systems. In *ACM Transactions on Cyber-physical Systems*. Volume 1, Issue 2. February 2017.
- [2] Laura Stefanizzi, Luca Mottola, Luca Mainetti, and Luigi Patrono. COIN: Opening the Internet of Things to People's Mobile Devices. In *IEEE Communications - Special Issue on People-centric Internet of Things*. Volume 55, Issue 2. February 2017.
- [3] Naveed Bhatti, Hamad Alizai, Affan Syed, and Luca Mottola. Energy Harvesting and Wireless Transfer in Sensor Network Applications: Concepts and Experiences. In *ACM Transactions on Sensor Networks*, Volume 12, Issue 3. August 2016.
- [4] Arshad Jhumka and Luca Mottola. View Consistency in Wireless Sensor Networks. In *ACM Transactions on Sensor Networks*, Volume 12, Issue 3. August 2016.

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<sup>3</sup>The standard ordering of authors in Italy is alphabetical.

- [5] Alessandro Sivieri, Luca Mottola, and Gianpaolo Cugola. Building Internet of Things Software with ELIoT. In *International Journal on Computer Communications - Special Issue on Internet of Things: Research challenges and Solutions*, Volume 89-90. September 2016.
- [6] Stefan Guna, Luca Mottola, and Gian Pietro Picco. DICE: Monitoring Global Invariants of Physical Processes using Wireless Sensor Networks. In *ACM Transactions on Sensor Networks*, Volume 10, Issue 4. June 2014.
- [7] Prasant Misra, Luca Mottola, Shahid Raza, Simon Duquennoy, Nicolas Tsiftes, Joel Hoglund, and Thiemo Voigt. Supporting Cyberphysical Systems with Wireless Sensor Networks: An Outlook of Software and Services. In *Journal of the Indian Institute of Science (publishing since 1914) - Special Issue on Cyberphysical Systems*, Volume 93, Issue 3. September 2013.
- [8] Nouha Baccour, Anis Koubaa, Luca Mottola, Marco Zuniga, Habib Youssef, Carlo Alberto Boano, and Mario Alves. Radio Link Quality Estimation in Wireless Sensor Networks: a Survey. In *ACM Transactions on Sensor Networks*, Volume 8, Issue 4. November 2012.
- [9] Luca Mottola and Gian Pietro Picco. Middleware for Wireless Sensor Networks: An Outlook. In *Journal of Internet Services and Application*, Volume 3, Issue 1. May 2012.
- [10] Luca Mottola and Gian Pietro Picco. MUSTER: Adaptive Energy-Aware Multi-Sink Routing in Wireless Sensor Networks. In *IEEE Transactions on Mobile Computing*, Volume 10, Issue 12. December 2011.
- [11] Luciano Baresi, Carlo Ghezzi, and Luca Mottola. Loupe: Verifying Publish-Subscribe Architectures with a Magnifying Lens. In *IEEE Transactions on Software Engineering*, Volume 37, Issue 2. April 2011.
- [12] Luca Mottola and Gian Pietro Picco. Programming Wireless Sensor Networks: Fundamental Concepts and State of the Art. In *ACM Computing Surveys*, Volume 43, Issue 3. April 2011.
- [13] Luca Mottola, Gian Pietro Picco, Matteo Ceriotti, Stefan Guna, and Amy L. Murphy. Not All Wireless Sensor Networks Are Created Equal: A Comparative Study On Tunnels. In *ACM Transactions on Sensor Networks*, Volume 7, Issue 2. August 2010.
- [14] Daniele Zonta, Huayong Wu, Matteo Pozzi, Paolo Zanon, Matteo Ceriotti, Luca Mottola, Gian Pietro Picco, Amy L. Murphy, Stefan Guna, and Michele Corrá. Wireless Sensor Networks for Permanent Health Monitoring of Historic Constructions. In *SPIE International Journal on Smart Structures and Systems. Special Issue on Wireless Sensor Advances and Applications for Civil Infrastructure Monitoring*. Volume 6, Issue 5-6. June 2010.
- [15] Luca Mottola, Gianpaolo Cugola, and Gian Pietro Picco. A Self-Repairing Tree Topology Enabling Content-Based Routing in Mobile Ad-hoc Networks. In *IEEE Transactions on Mobile Computing*, Volume 7, Issue 8. August 2008.
- [16] Paolo Costa, Geoff Coulson, Cecilia Mascolo, Luca Mottola, Gian Pietro Picco and Stefanos Zachariadis. A Reconfigurable Component-Based Middleware of Networked Embedded Systems. In *International Journal of Wireless Information Networks*, Volume 14, Issue 2. June 2007. Springer Press.

## Authored Books

- [17] Nouha Baccour, Anis Koubaa, Luca Mottola, Claro Noda, Hossein Fotouhi, Mario Alves, Hossein Youssef, Marco Zuniga, Carlo Alberto Boano, Kay Roemer, Daniele Puccinelli, and Thiemo Voigt. *Radio Link Quality Estimation in Low-power Wireless Networks*, Part of the SpringerBriefs in Cooperating Objects, July 2013, Springer Press.

## Edited Books

- [18] Koen Langendoen, Wen Hu, Federico Ferrari, Marco Zimmerling, and Luca Mottola. *Proceedings of the 5<sup>th</sup> Workshop on Real-world Wireless Sensor Networks (REALWSN)*, Como Lake (Italy), September 2013, Springer Press.
- [19] Stamatis Karnouskos, Pedro Marron, Giancarlo Fortino, Luca Mottola, and Luis Martinez-de Dios. *The Emerging Domain of Cooperating Objects: Applications and Markets*, Part of the SpringerBriefs in Cooperating Objects, July 2013, Springer Press.

- [20] Kurth Geihs, Luca Mottola, Gian Pietro Picco, and Kay Roemer. *Proceedings of the 2<sup>nd</sup> Workshop on Software Engineering for Sensor Network Applications (SESENA - colocated with ICSE)*, Waikiki (USA), May 2011, IEEE Press.
- [21] Pedro J. Marron, Thiemo Voigt, Peter Corke, and Luca Mottola. *Proceedings of the 4<sup>th</sup> Workshop on Real-world Wireless Sensor Networks (REALWSN)*, Colombo (Sri Lanka), December 2010, Springer Press.

### Contributions to Books

- [22] Luca Mottola and Thiemo Voigt. From Smart Dust to Wireless Sensor Networks. Foreword to: *Wireless Sensor Networks: Deployments and Design Frameworks*. Elena Gaura, Michael Allen, Lewis Girod, James Brusey, and Geoffrey Werner-Challen eds., Springer Press, 2010.
- [23] Paolo Costa, Luca Mottola, Amy L. Murphy, and Gian Pietro Picco. Tuple Space Middleware for Wireless Networks. Invited chapter in: *Middleware for Network Eccentric and Mobile Applications*. Benoit Gabinato, Hugo Miranda, and Louis Rodrigues eds., Springer Press, 2008.

### International Magazines

- [24] Luca Mottola, Niklas Wirstrom, and Thiemo Voigt. Building Systems of Aerial Drones. In *ERCIM News - Special Theme "Cyberphysical Systems"*. Number 97, 2014.
- [25] Luca Mottola. Wireless Sensor Networks and the Tower that Breathes. Invited article as follow-up to the *Cor Bayeen Award* ceremony, in *ERCIM News*. Number 88, 2011.

### International Conferences

- [26] Naveed Bhatti and Luca Mottola. HarvOS: Efficient Code Instrumentation for Transiently-powered Embedded Devices. In *Proceedings of the 16th ACM/IEEE International Conference on Information Processing in Sensor Networks (IPSN - part of CPSWEEK)*, Pittsburg (PA, US), April 2017.
- [27] Giovanni Tarter, Luca Mottola, and Gian Pietro Picco. Directional Antennas for Convergecast in Wireless Sensor Networks: Are They a Good Idea?. In *Proceedings of the 13<sup>th</sup> IEEE International Conference on Mobile Ad-hoc and Sensor Systems (MASS)*, Brasilia (Brasil), October 2016.
- [28] Endri Bregu, Nicola Casamassima, Daniel Cantoni, Luca Mottola, and Kamin Whitehouse. Reactive Control of Autonomous Drones. In *Proceedings of the 14th ACM International Conference on Mobile Systems, Applications, and Services (MOBISYS)* Singapore, June 2016. *Best Paper Award*.
- [29] Naveed Bhatti and Luca Mottola. Efficient State Retention for Transiently-powered Embedded Sensing. In *Proceedings of the 13th ACM International Conference on Embedded Wireless Systems and Networks (EWSN)* Graz (Austria), February 2016.
- [30] Mathieu Michel, Luca Mottola, Nicolas Tsiftes, and Thiemo Voigt. Predictable MAC-level Performance in Low-power Wireless under Interference. In *Proceedings of the 13th ACM International Conference on Embedded Wireless Systems and Networks (EWSN)* Graz (Austria), February 2016.
- [31] Andrea Azzarà and Luca Mottola. Virtual Resources for the Internet of Things. In *Proceedings of the IEEE World Forum on Internet of Things (WF-IoT)* Milano (Italy), December 2015.
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