

Sébastien Mosser, *Maître de conférences* (Ass. Prof) at Université Nice – Sophia Antipolis (UNS)  
Birthdate: 16/11/1983, 33 years old  
Postal address: 930 route des colles, Polytech Nice – Sophia Antipolis, BP145, 06903 Sophia Antipolis CEDEX  
Email: [mosser@i3s.unice.fr](mailto:mosser@i3s.unice.fr)  
Research lab: I3S Laboratory (CNRS – UNS), SPARKS Theme, *Scalable Software System* (S<sup>3</sup>) axis  
Website: <http://www.i3s.unice.fr/~mosser/research/start>

## Positions

- **2012 – ...** *Maître de Conférences* at Université Nice – Sophia Antipolis
  - Head of the Software Architecture specialization of the Computer Science MSc since 2013
  - Coordinating the Software Engineering course portfolio for the CS department
- **2011 – 2012** Permanent Research Scientist at SINTEF IKT (Norway)
  - Involved in several FP7 research projects at the European Level dealing with software composition
  - Application domains: Cloud computing, Internet of Things.
- **2010 – 2011** Inria Postdoctoral position, “*Software Product Lines & Dynamic Adaptation*”
  - Directed by Laurence Duchien, as part of the ADAM project team at Inria Lille-Nord Europe
- **2007 – 2010** PhD Candidate, “*Behavioral Compositions in Service-Oriented Architecture*”
  - Funded by a grant from the Ministry of Research (rank 1) and a Teaching Assistant position
  - Advisors: Michel Riveill & Mireille Blay-Fornarino, UNS, CNRS

## Software

- **Smart Campus** is an open-source framework used to support the collection of data collected by sensors. It represents 12,000 lines of code (LoC) and involved a team of 9 engineers to support deployments and experiments on top of it (2013-2015). I supervised the project and designed the software architecture. <http://smartcampus.github.io/>
- **Island** is a pedagogical software used to teach software engineering at UNS. Written in Scala using a functional model, it implements in a composable way and highly variable map generation framework using state of the art geometrical algorithms. It represents 10,000 LoC (single developer), and was used by 200 students since 2014. <http://ace-design.github.io/island/>
- **ADORE** is the reference implementation of the composition algorithms used to support my PhD thesis. Implemented using the logical paradigm, it represents 14 KLoC of Prolog & Java code (single developer). The prototype contained 4 composition algorithms dedicated to business processes evolution.

## Service

- Teaching
  - Since 2017: Responsible of the *Software Engineering & Compilation* course at ENS Lyon.
  - Since 2015: Responsible of the *Domain-Specific Languages* course for the Software Engineering national summer school organised by GdR GPL (CNRS, 40 students)
  - Since 2013: Supervising the *Software Architecture* specialization of the MSc (~35 students)
  - Since 2012: Supervising project-oriented teaching for the CS department of Polytech Nice
  - Since 2012: Responsible of the *Software Engineering* courses for the CS department (*e.g.*, tools for software engineering, software architecture, domain-specific languages, service-oriented architecture)
- Student supervision
  - MSc students: 3 students since 2013, dealing with software composition algorithms applied to different application domains: GUI dashboards, sensor collection policies and software variability
  - PhD students: I am involved in the co-supervision of 6 PhD students since 2010. All these students contribute to (or rely on) Software Composition and Separation of Concerns.
- Conferences / Program committee member:
  - Journal:
    - Regular reviewer for Software and System Modelling (SoSyM) since 2011
  - International Conferences:

- ICWS'17-16-15-14-13, BigData'16-15-14, ESEC-FSE'13 (software artefact evaluation)
- International Workshops
  - SCDM'17-16-15-14, MOMO'17-16, CloudMDE'14, NordiCloud'14-13, MultiCloud'13
- National Conferences:
  - CIEL'16-14
- Organization committee:
  - Modularity Modelling (18-17-16) workshop, Modularity'15 conference social media chair
- National involvement in the GdR GPL (Research workgroup focusing on Software Engineering and Languages):
  - 2015 – 2020: Co-leading the GL\CE workgroup (17 teams)
  - 2013: Leading the PING workgroup (12 teams) about software engineering teaching
  - 2011: Member of the local organization committee of the National Days of GdR GPL
- Past Involvement in Contracts (since 2011):
  - EU: REMICS (4,5M€) & ENVISION (5,3M€) as team member, MODACloud (8,7M€) & PaaSage (9,7M€) as proposal writer and work package leader (until 2012)
  - National: MODERATES (1M€) & YourCast (250K€) as member, IDOL (7K€) & M4S (10K€) as PI
  - Industrial: Research contract with VISTEON about software variability (70K€) as co-PI

## Selected Publications

The full list of my publications (1 journal, 13 conferences, 14 workshops at the international level since 2007) is available on my personal website, as well as on the HAL and DBLP platforms. The five publications shortlisted here are representative of my work on software composition and separation of concerns in the last 5 years.

- [1] **Sébastien Mosser, Mireille Blay-Fornarino. “ADORE, a Logical Meta-model Supporting Business Process Evolution” in Science of Comp. Prog. (SCP), Special issue on Soft. Evolution, Adaptability and Maintenance** *Published in Science of Computer Programming in 2013, this paper is a summary of the contributions made to the Separation of Concerns field with respect to the business processes application domain. It defines 4 composition operators and the underlying composition model used to support the safe evolution of large business processes in a commutative way. The formal model is validated on an external case study provided by McGill University.*
- [2] **Cyril Cecchinel, Sébastien Mosser, Philippe Collet. “Software Development Support for Shared Sensing Infrastructures: a Generative and Dynamic Approach” in Proceedings of the 14th International Conference on Software Reuse (ICSR'15), Springer, pages 1-8, Miami, Florida, 4-6 January 2015** *This paper deals with the definition of two operators dedicated to sensor data collection policies. On top of variability models linked to SAT-solving mechanisms, we proposed (i) a decomposition operator that separate a given collection policies according to the features available at the hardware level and (ii) a composition operator used to combine multiple policies on the same sensor when necessary. These operators rely on automata theory to model synchronous behaviours.*
- [3] **Ivan Logre, Sébastien Mosser, Philippe Collet, Michel Riveill. “Sensor Data Visualisation: a Composition-based Approach to Support Domain Variability” in Proceedings of the European Conference on Modelling Foundations and Applications (ECMFA'14), pages 1-16, Springer LNCS, York, United Kingdom, 23-24 July 2014** *This paper deal with the safe composition of multiple products into a software product line. The obtained product line is then used to automatically compose code assets to generate graphical dashboards on top of sensor networks.*
- [4] **Sébastien Mosser, Mireille Blay-Fornarino, Laurence Duchien. “A Commutative Model Composition Operator to Support Software Adaptation” in Proceedings of the 8th European Conference on Modelling Foundations and Applications (ECMFA'12), pages 4-19, Springer LNCS, Copenhagen, Denmark, 2-5 July 2012** *This paper is dedicated to the definition of a formal model supporting commutative composition by nature. Considering a model as the sequence of action necessary to build it, we proposed a way to model the classical “chained composition” ( $f \circ g$ ) and a commutative composition operator ( $f | g$ ) using the same formal model.*
- [5] **Sébastien Mosser, Gabriel Hermosillo, Anne-Françoise Le Meur, Lionel Seinturier, Laurence Duchien. “Undoing Event-Driven Adaptation of Business Processes” in Procs of the 8th International Conf on Services Comp (2011)** *Considering a dynamic adaptation context, it focuses on the definition of a “de-adaptation” mechanisms that support the automated removal of a given concern in a given business process. This contribution allows developers to only write adaptation rules, and automate the deactivation of a given adaptation using an automated algorithm. The contribution is evaluated on an e-commerce use case and comes with a logical-based prototype.*