Updated Friday, August 14, 2023

SÉBASTIEN MOSSER

BUSINESS ADDRESS

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EDUCATIONAL BACKGROUND

Degrees and Diplomas

2010 Ph.D., Computer Science & Software Engineering, *Université de Nice*, France
2007 Engineering Degree, *École Polytechnique Universitaire de l'Université de Nice*, France
2004 *Diplôme d'Études Universitaires Générales*, *Université de Nice – Sophia Antipolis*, France

Qualifications, Licensures and Certifications

2023 Inclusive Excellence Leadership, Equity and Inclusion Office, McMaster Univ (ongoing)
2022 Instructional Skills Workshop, McPherson Institute, McMaster University
2022 Ethical Conduct for Research Involving Humans – TCPS 2, CIHR/SSHRC/NSERC, Canada
2022 McMaster University Ethics Tutorial, McMaster Ethic Board Committee, Canada
2021 Bias in Peer Review, CIHR/SSHRC/NSERC, Canada

Other Specialized Training

2011 Postdoc, Software engineering, *Inria Lille-Nord Europe*, France

CURRENT STATUS AT MCMASTER

01/2022 – … **Associate Professor with tenure**, Faculty of Engineering, CAS department
Executive member of **McMaster Centre for Software Certification** (McSCert, since 2022)
Faculty member of **McMaster Institute for Research on Aging** (MIRA, since 2023)

PROFESSIONAL ORGANIZATIONS

06/23 – … P.Eng., *Professional Engineers Ontario* (PEO)
12/21 – 03/24 P.Eng., *Ordre des Ingénieurs du Québec* (OIQ). *(License transferred, 05/23).*
01/21 – … Member, *Société Informatique de France* (Academic Society).

EMPLOYMENT HISTORY

Academic

01/22 – … Associate Professor with tenure, Faculty of Engineering, CAS department, McMaster, Canada
06/21 – 12/22 Associate Professor with tenure, Faculty of Science, *Université du Québec à Montréal*, Canada
(Administrative leave of absence from 01/22 to 12/22)
01/19 – 05/21 Associate Professor, tenure-track, Faculty of Science, *Université du Québec à Montréal*, Canada

09/13 – 12/18 *Maître de conferences*, tenured, Université Côte d'Azur, Nice, France
09/12 – 08/13 *Maître de conferences*, tenure track, Université Côte d'Azur, Nice, France
09/11 – 08/12 Research Scientist, SINTEF, Oslo, Norway
11/10 – 09/11 Postdoctoral fellow, Inria Lille – Nord Europe, Villeneuve d'Ascq, France
09/07 – 10/10 Ph.D. fellow, Université de Nice, Nice, France
09/07 – 10/10 *Moniteur de l'enseignement supérieur*, Université de Nice, Nice, France

SCHOLARLY AND PROFESSIONAL ACTIVITIES

Editorial Boards

01/22 - … Journal of Object Technology (AITO).

Grant & Personnel Committees

06/22 - … NSERC 1507 Discovery Grant Committee. **Co-chair** for software engineering
05/22 - … High Council for Evaluation of Research and Higher Education (HCÉRES, France). **Expert**.
10/22 – 05/23 CS-CAN Excellence in Teaching award. **Committee member**.
06/21 – 05/22 NSERC 1507 Discovery Grant Committee. **Committee member**
01/20 – 12/21 Fond de Recherche Québécois (FRQNT). PhD grant awards. **Committee member**.
01/19 – 12/20 NSERC USRA. Internal committee at UQAM. **Committee member**.

Executive Positions

01/22 - … Working group on Model-Driven Engineering & Education, MDENet. **Founding member**.
01/16 – 12/18 Steering committee for hiring (CPRH), Université Côte d'Azur. **Nominated member**
01/08 – 12/10 Steering committee, Action IDM (CNRS, France). **Student representative member**
11/07 – 12/15 Steering Committee. *La Nuit de l'Info* (Univ. competition, ~50k€/y). **Founding member**.

Journal Referee

Journal of Software and System Modelling (SoSyM, Springer).	27 reviews
Journal of Object Technology (JOT, AITO).	6 reviews
Transactions on Cloud Computing (TCC, IEEE).	2 reviews
Journal of Computer Languages (COLA, Elsevier).	2 reviews
Journal of Systems and Software (JSS, Elsevier).	2 reviews
Journal of the Internet of Things (IoT, IEEE).	1 review
Software Quality Journal (SQJ, Springer).	1 review
Empirical Software Engineering (ESE, Springer).	1 review

External Grant Reviews

2023 Agence Nationale de la Recherche (ANR, France). Early Career Research Program (JCJC)
2020 Agence Nationale de la Recherche (ANR, France). Early Career Research Program (JCJC)
2020 *Institut Mines-Telecom Atlantique* (IMT, France). Research Centre creation committee.
2017 NSERC 1507 Discovery Grants. External Reviewer.
2011 Agence Nationale de la Recherche (ANR, France). Industrial Transfer Project.

Conference Organization Committees

2023 26th ACM/IEEE International Conference on Model Driven Engineering Languages and Systems (MODELS). *Social Media & Publicity Chair*. Västerås, Sweden
2022 *École des Jeunes Chercheuses et Jeune Chercheurs en Programmation* (EJCP, National summer school for Ph.D. students in soft. eng. & prog. languages). *Co-chair.* Virtual.
2022 25th ACM/IEEE International Conference on Model Driven Engineering Languages and Systems (MODELS). *Conference chair*. Montréal, Canada
2021 *École des Jeunes Chercheuses et Jeune Chercheurs en Programmation* (EJCP, National summer school for Ph.D. students in soft. gng. & prog. languages). *Co-chair.* Virtual.
2020 23rd ACM/IEEE International Conference on Model Driven Engineering Languages and Systems (MODELS). *Virtualization chair and Student Volunteers chair*. Virtual

2019 41st ACM/IEEE International Conference on Software Engineering. *Accommodation chair*. Montréal, Canada.
2015 14th ACM International Conference on MODULARITY. *Social Media chair*. Fort Collins, CO, USA.
2014 8th International Workshop on Variability Modelling of Software-intensive Systems (VaMoS). *Organization committee*. Nice, France.
2012 3rd IEEE World Congress on SERVICES. *Career development chair*. Honolulu, Hawaii, USA.
2011 *3ème journées nationales du GdR GPL* (National conf.). *Organization committee*. Lille, France

Conference Program Committees

2023 26th ACM/IEEE International Conference on Model Driven Engineering Languages and Systems (MODELS). *Foundation track & Doctoral Symposium mentor*
2022 25th ACM/IEEE International Conference on Model Driven Engineering Languages and Systems (MODELS). *Foundation track.*
2021 43rd ACM/IEEE International Conference on Software Engineering (ICSE). *Artifact evaluation track*.
2021 24th ACM/IEEE International Conference on Model Driven Engineering Languages and Systems (MODELS). *Foundation track & Educator Symposium track*.
2020 24th ACM International Systems and Software Product Line Conference (SPLC*). Research track.*
2020 23rd ACM/IEEE International Conference on Model Driven Engineering Languages and Systems (MODELS). *Doctoral symposium track.*
2019 13th IEEE International Conference on Research Challenges in Information Science (RCIS). *Doctoral Symposium track.*
2019 7th International Conference on Model-Driven Engineering and Software Development (MODELSWARD). *Research track*.
2015 – … IEEE International Conference on Big Data (BigData). *Research track.*
2013 – … IEEE International Conference on Web Services (ICWS). *Research track*.

Workshop Organization & Program Committees

2023 1st Workshop on Model-based Systems Engineering (co-located with MODELS). *Steering committee*
2022 – … Model-driven Requirement Engineering Worksop (co-located with RE), *PC member*.
2023 3rd International workshop on MDE for Smart IoT Systems (co-located with STAF). *Steering committee*.
2022 – … International workshop on Requirements Engineering for Well-Being, Aging and Health (REWBAH). *PC member*.
2021 – … 1st International Workshop on Variability Management for Modern Technologies (co-located with SPLC). *Organization committee*.
2021 – 2022 International workshop on MDE for Smart IoT Systems (co-located with STAF). *Organization committee fort he first two editions*.
2019 – 2022 International Workshop on DevOps modelling (co-located with Models). *Steering committee*.
2021 1st International Workshop on Foundations and Practice of Visual Modeling (co-located with STAF). *PC member*.
2020 International Workshop on Software Engineering for the IoT (co-located with ICSE). *PC member*.
2018 International Workshop on Modeling for Microservices. *PC member*.
2016 2nd International Workshop on Modularity in Modelling (co-located with <Programming>). *Organization committee*.
2014 – 2022 International workshop on Scalable Data Management (co-located with BigData). *PC member*.
2014 2nd International Workshop on Model-Driven Engineering on and for the Cloud. *PC Member*.
2013 – 2014 Nordic Workshop on Cloud Computing. *PC Member*.

AREAS OF INTEREST

Research

Software Engineering
Separation of concerns
Domain-specific languages
Software design at large-scale

Teaching

Distributed Systems
Software development & testing
Software design and modelling
Software construction and maintenance.

HONOURS

2022 Corinne Pulgar (MASc student under my supervision) won the **bronze medal** in the ACM Student Research Competition at MODELS for her research work done in my group (out of 14 participants, being the only master student competing).
2021 **Best reviewer award**. ACM/IEEE MODELS (24th edition)
2018 **Best Paper award**, 33rd ACM/SIGAPP Symposium on Applied Computing (SAC)
2015-2018 *Prime d'Encadrement Doctoral et de Recherche* (PEDR, National Council of Universities, France) *20k$ salary bonus for excellence in research and doctoral supervision, evaluated nationally*.

COURSES TAUGHT

Undergraduate (at McMaster, since 2022)

Program

Year	Role/Title	Course Code/Title	Term	Section (C01, L01, T01)	% Taught	Enrolment	Duration	Additional Comments
2024	Instructor	SE 2AA4	Winter	C01	100	170 (?)	1 term	–
2023	Instructor	SE/CS 3RA3	Fall	C01	100	280 (?)	1 term	Creation
2023	Instructor	SE 2AA4	Winter	C01	100	162	1 term	Creation
2022	Instructor	SE 3XB3	Fall	C01	100	121	1 term	Creation

- SE 2AA4: *Introduction to software Development*
- SE/CS 3RA3: *Software Requirements & Security Considerations*
- SE 3XB3: *Software Engineering Practice and Experience: Binding Theory to Practice*

Graduate (at McMaster, since Jan 2022)

Program

Year	Role/Title	Course Code/Title	Term	% Taught	Enrolment	Duration	Additional Comments
2023	Instructor	CAS 735	Fall	100	20 (?)	1 term	–
2022	Instructor	CAS 735	Fall	100	20	1 term	Creation

- CAS 735: *(Micro-)Service Oriented Architectures*

CONTRIBUTIONS TO TEACHING PRACTICE

Pedagogic Innovation and/or Development of Technology-enhanced Learning

UQAM/INF5153 – Software Design. To tackle the challenges of teaching software design in a COVID context, I re-designed the course into a "flipped classroom" one starting in Fall 2020. The "theoretical" part is published as openly accessible videos (creative commons license) on YouTube, representing more than 11 hours of content using the French language. The classroom time is used to work on case studies with small groups of students. Four universities now reuse this course material. Reusable material is available at the following URL: *https://conception-objet.github.io/* (FR)

Leadership in Delivery of Educational Programs

ISW During Summer 2022, I successfully completed the Instructional skill workshop offered by the McPherson Institute to reflect on course design and delivery,

Experiential learning. As Associate Professor at *Université Côte d'Azur*, I oversaw the designing and implementation of a "project-based"/experiential approach for software engineering courses in the department (involving redesigning ten courses in the program). Following up on this work, I was invited to give invited talks at several education conferences, and I consulted with 17 different universities in France on this topic.

Course/Curriculum Development

UQAM/INF600G – Designing tailored applications for the aging population. This course is designed as a collaboration between UQAM and a Human-Computer Interaction team in France (funded by Quebec's research agency – FRQNT). We created the course to focus on designing and implementing software for the aging population. Students are confronted with the multiple issues senior citizens face when using software and design adaptations to tackle these issues. Three institutions use the course (UQAM, Polytech Sophia, and IUT Nice – Côte d'Azur) and a collaboration with Toulouse (*Université Fédérale Toulouse – Midi Pyrénées*).
URL: *https://ace-design.github.io/champlain/* (FR)

Development/Evaluation of Educational Materials and Programs

2022 – … I was selected to join the international expert pool of High Council for Evaluation of Research and Higher Education (HCÉRES), a French accreditation board in charge of evaluating universities.

2014 – Engineering program evaluation. As part of a "school of engineering" in France, programs must be evaluated every six years by the *Commission du Titre d'Ingénieur* (CTI) at the national level (equivalent to CEAB). I led the software engineering part of the accreditation application (which was successfully renewed for six years).

Other

Guest Lectures. I am often invited to give "invited lectures" in the context of other courses. I regularly gave interventions dedicated to empirical software engineering (UCA, UQAM), software design (Toulouse), and microservice architectures (ETS) in other programs.

Continuous Training. As part of *Centre National de la Recherche Scientifique* (CNRS) initiative for engineers' continuous training, I oversaw the courses "Agile software development" and "Business process modelling" for the *DevLog* national network in 2017.

SUPERVISORSHIPS

Note: Students in Montreal are now co-supervised to ease my transition from UQAM to McMaster (2022).

Master (thesis)

5 sole supervised
1 co-supervised

Completed

Dates	Student's Name	Project Title	Department/Program	Supervisor	Co-Supervisor
2017 – 2018	Günther Jungblunth	Developping scalable data-processing pipelines	MASc / UCA (France)	S. Mosser	
2015 – 2016	Benjamin Benni	A language-driven approach to software composition	MASc / UCA (France)	S. Mosser	
2013 – 2014	Cyril Cecchinel	Code generation applied to sensor networks	MASc / UCA (France)	S. Mosser	
2012 – 2013	Ivan Logre	User-centered dashboards for data collected by large scale sensor networks	MASc / UCA (France)	S. Mosser	
2011 – 2012	Eirik Brantzæg	CloudML, a DSL for model-based ealization of applications in the cloud	MSc / Universitetet i Oslo (Norway)	S. Mosser	

In progress

Dates	Student's Name	Project Title	Department/Program	Supervisor	Co-Supervisor
09/23 – …	Stepan Bryantsev	Architecture to support heterogeneous information form legacy software	CAS / MASc in Software Engineering	S. Mosser	
09/23 – …	Arman Samiei	DevOps for software defined network	CAS / MASc in Software Engineering	S. Mosser	
01/23 – …	Azam Mahdipour (transfer from the M.Eng. program)	Single source of Truth for reverse engineering legacy software	CAS / MASc in Software Engineering	S. Mosser	
01/23 – …	Alexandre Lachance	Static code analysis for P4	CAS / MASc in Software Engineering	S. Mosser	
09/21 – …	Corinne Pulgar	Justification diagrams to evaluate the quality of DevOps pipelines	MASc / ETS Montréal	S. Mosser	F. Bordeleau (ETS Montréal)

Inactive

Dates	Student's Name	Project Title	Department/Program	Supervisor	Co-Supervisor
2020-…	J.-P. Caissy *(paused because of COVID-19)*	Reverse engineering of microservices architectures	Informatique UQAM. MSc in Computer Science	S. Mosser	

Doctoral

Note: In the French system, Assistant Professors cannot supervise doctoral students independently until they defend a habilitation thesis. I was awarded two exceptional exemptions from the President of the University for the thesis of B. Benni and I. Logre, based on my research activity and results.

2 sole supervised
5 co-supervised

Completed

Dates	Student's Name	Project Title	Department/Program	Supervisor	Co-Supervisor
2017 – 2020	Sébastien Bonnieux	Float for multidisciplinary monitoring of the marine environment. From business expertise to embedded codes	UCA (France). PhD in Earth and Universe Science	G. Nolet, M. Blay-Fornarino	S. Mosser
2016 – 2019	Sami Lazreg	Variability-intensive applications over highly configurable platforms: Early feasibility and optimality analysis	UCA (France). PhD in Computer Science	P. Collet	S. Mosser
2016 – 2019	Benjamin Benni	Enabling white-box reasonings on black-box composition operators in a domain-independent way	UCA (France). PhD in Computer Science	S. Mosser	
2014 – 2017	Cyril Cecchinel	DEPOSIT, an approach to model and deploy data collection policies on heterogeneous and shared sensor networks	UCA (France). PhD in Computer Science	S. Mosser	P. Collet
2013 – 2017	Ivan Logre	Preserving separation of concerns while integrating heterogeneous domains in software systems	UCA (France). PhD in Computer Science	S. Mosser	
2010 – 2014	Alexandre Feugas	An agile, reliable, and minimalist approach to preserve the quality of service of business-processes based applications during their evolutions	University of Lille, PhD in Computer Science	L. Duchien	S. Mosser

In progress

Dates	Student's Name	Project Title	Department/Program	Supervisor	Co-Supervisor
2021 - …	Alexandra Lapointe-Boisvert	Functional testing to support software measurements	Informatique UQAM, PhD in Computer Science	S. Mosser	S. Trudel

Supervisory Committees

2022 Pete Michalsky. PhD in Software Engineering, McMaster University.
2022 Saira Musa. PhD in Software Engineering, McMaster University.
2022 Naveen Ganesh Muralidharan. MASc in Software Engineering. McMaster University.
2019-2022 Hyacinth Ali (McGill University, Canada). Ph.D. in Software Engineering.
Modular combination and reuse of languages with perspective
2019-… Dimitri Prestat (UQAM, Canada). Ph.D. in Computer Science.
Formal detection of defaults in mobile applications.

Examination Committees

2023 William Flageol. PhD in Computer Science, Concordia University. *External reviewer*.

2022 Devrim Tokcan. PhD in Software Engineering. *Comprehensive Exam*.
2022 Shams Alkhulaif. PhD in Software Engineering. *Comprehensive Exam*.
2021 Alexandre Rio (Université de Rennes, France). Ph.D in Computer Science. *External reviewer*. *Optimizing renewable energy usage: a digital twin for microgrids.*
2021 Thibault Béziers La Fosse (Télécom Bretagne, France). Ph.D. in Computer Science. *External reviewer*. *Model-driven Method for Dynamic Analysis applied to Energy-Aware Software Engineering*
2016 Thi-Mai-Anh Bui (Université Paris 6, France). Ph.D. in Computer Science. *External reviewer*. *Separation of concerns in epidemiology*.

Master (non-thesis)

Completed

Dates	Student's Name	Project Title	Department/Program	Supervisor	Co-Supervisor
2021 – 2022	Mohamed Dramane Jean-Philippe Koïta	*Caractérisation des dépendances architecturales dans les architectures microservices*	UQAM / M.Eng.	S. Mosser	
2021 – 2022	Amine Soufyani	*Evolution et impact des technologies de déploiement dans les architectures orientées microservices*	UQAM / M.Eng.	S. Mosser	

In progress

Dates	Student's Name	Project Title	Department/Program	Supervisor	Co-Supervisor
2023 - …	Jason Lyu	*TBD*	M.Eng in Software Engineering / CAS	S. Mosser	
2022 - …	Kai Sun	*TBD*	M.Eng in Software Engineering / CAS	S. Mosser	
2022 - …	Deesha Patel	Justification diagrams applied to CI pipelines	M.Eng in Software Engineering / CAS	S. Mosser	

Research Interns supervision

2023 Jonah Alle Monne (M.A.Sc, *Université Grenoble Alpes*). MITACS Globalink internship. *Exploring LLVM internal structure evolution over time*.
Julia Brzustowski, BSc internship, McMaster. *Probes to extract information from legacy software*. (co-supervised with Vera Pantelic)
Maël Charpentier, BSc internship (Université de Montréal). *Code completion for the P4 language.*
Nirmal Chaudari, B.Eng (NSERC USRA) McMaster. *Improving multi-language merge algorithms*.
Ahmed Elzaria, B.Eng McMaster(Excellence in Research Award). *Investigating interactions among passes in the LLVM compiler toolchain.*
Dennis Fong, B.Eng. McMaster. *Using SAT solving for package dependency management in SPACK*.
(co-supervised with Camille Coti, ETS Montréal)
Noel Chungath Gregory, B.Eng. McMaster. *Lightweight compiler engineering for the P4 language*.
Aaron Loh. B.Eng. McMaster (Dean's Excellence list). *Analyzing DevOps CI pipelines at scale*
Madhur Jain. (B.Sc., Indian Institute of Technology Bhilai). MITACS Globalink internship. *Improving multi-language support for Git-merge.*
Nitish Kumar (B.Sc., Indian Institute of Technology Kharagpur). MITACS Globalink internship. *Identifying conflicting dependencies in SPACK*. (co-supervised with Camille Coti, ETS Montréal)
2022 Sathurshan Arulmohan, B.Eng. McMaster (Dean's Excellence list). *Using Natural Language Processing to extract conceptual models from user stories backlog*.
Richard Li, B.Eng. internship (NSERC USRA). *Building a corpus of git merge conflicts.*

Alexandre Niney B.Sc. internship. *Using AI to check game rules balance at scale* (co-supervised with Vladimir Reinharz*)*
Floriane Paris, M.Eng internship. *Software visualization for version control system repositories.*
Haotian Xe, M.Sc internship. *Graphical DSL for ArduinoML, a language to program the internet of things*, (co-supervised with Steffen Zschaler)
Normand Lancelot, B.Sc. internship. *Measuring the Severity of the Signs of Eating Disorders Using Similarity-Based Models*. (co-supervised with Marie-Jean Meurs)

2021 Normand Lancelot, B.Sc. internship. *Extracting emotions from a twitter corpus.*
Amélie Lachapelle-Dagenais, B.Sc. internship. *Adapting an application to the aging population.*

2020 Alyson Lecuyer, B.Tech. internship. *Showcasing students' result related to the aging population*.
Avril de Goër de Herve, M.Sc. internship. *Impact analysis of compilation passes in LLVM*.
Jérémy Fornarino, M.Eng. internship. *Collecting mental-health data from patients' phones*.
Yan Conigliaro, M.Eng. internship. *Mining GitHub to build a corpus of conflicting merge scenarios.*
Olivier Levasseur, B.Sc. internship. *Heuristics to improve git-merge for Java programs.*

2019 Chaima Frouni, B.Sc. internship. *A form-based approach to collect data from patients*.
Gael Miton, Military engineering internship, *A simulator for underwater floating devices*.
Mathieu Paillard, M.Eng. internship. *A DSL to support fast prototyping of composition operators*.
Prune Pillone, M.Eng. internship. *Adapting software for the aging population*.
Florian Juroszek, M.Eng. internship. *Static analysis of microservice architectures*.
Alexis Segura, M.Eng. internship (Facebook Excellence Award). *Empirical analysis of git-merge conflicts*.
Sébastien Michelland, M.Sc. internship. *Identifying conflicts in the LLVM toolchain*.

2018 Alexis Couvreur, M.Sc. internship. *Applying Smart contracts in an IoT context*.
Florian Lehman, M.Eng. internship. *Software composition applied to Git*.
Olivier Boulet, M.Eng. internship. *Securing sensor data collection using blockchain.*
Florian Bourniquel, M.Eng. internship. *Visualizing interactions among code rewriters*.
Johan Mortara, M.Eng. Internship. *Automated deployment of blockchain infrastructures*.

2016 Fabien Vicente, M.Eng. internship. *Containerizing a complex architecture: the Atlassian example*.
Nicolas Lecourtois. M.Eng. internship. *Securing communications among containers*.

Research Assistants supervision

09/23 – 04/24	Nirmal Chaudari.	Contribution to the ***jPipe*** open-source software.
09/23 – 04/24	Noel Chungath Gregory.	Contribution to the ***p4-lsp*** open-source software.

LIFETIME RESEARCH FUNDING

Note: When a grant was issued by a foreign funding agency and/or in another currency that CAD, an "approximative" translation to Canadian dollars is provided in addition to the original amount.

Ongoing Funding

Name(s) (indicate PI, underline your name)	**Title/Purpose of Research**	**Years of Funding**	**Funding Source/Agency**	**Funding amount** (by year)
M.-J. Meurs (PI), C. Bardon (PI), S. Mosser (co-app)	RÉSO-T : *Une approche innovante culturellement sensible pour intégrer le traitement automatique du langage naturel dans les outils de prévention du suicide*	2023-2024	FRQNT (Quebec)	$50,000
F. Bordeleau (PI), J. Dingel, S. Mosser (co-PIs)	DevOps for Software Defined Network	2022 – 2025	NSERC-Mitacs Alliance Program	$330,000

S. Mosser (PI)	Startup fund	2022 - …	Faculty of Engineering	$200,000 (total)
S. Mosser, R. Paige (co-PIs)	Centre of Excellence for Artificial Intelligence and Smart Mobility – RTA 5: Cloud Automation	2021 – 2026	Cubic Transportation Systems (CTS)	$300,000
S. Mosser (PI)	Software composition at large scale	2020 – 2025	NSERC Discovery Grant	$29,000

Funding Completed

Note: The "funding amount" column for the completed projects represents the total amount of funding for the project, for its whole duration (as, depending on funding agencies, installments might not be yearly-based).

Name(s) (indicate PI, underline your name)	**Title/Purpose of Research**	**Years of Funding**	**Funding Source/Agency**	**Funding amount**
Y. Farmer (PI), M.-E. Bouthillier, A. Duhoux, S. Mosser, M.-J. Meurs	*La perception populationnelle du risque sanitaire et l'acceptabilité sociale face au déconfinement. Informer les décideurs politiques à l'aide du forage de données sur Twitter*	2021	SSHRC	$25,000
C. Messier (PI), M.-J. Meurs, J. Dupras, T. Handa, S. Mosser, A. Paquette, A. Smargiassi	*SylvCiT: un logiciel intelligent pour maximiser la résilience et les bienfaits des arbres municipaux face aux changements globaux*	2021 – 2022	FRQNT (QC)	$140,000
S. Vial (PI), M-J Meurs, S. Gambs, S. Guay, S. Mosser (co-PIs)	*Mentallys, un service unique de cyber-santé mentale.*	2020 – 2022	FRQNT (Quebec)	$100,000
M.-J. Meurs (PI), M. Benichou, G. Bondolfi, M. Bonenfant, S. Gambs, C. Malaterre, D. Martin, F. Millerand, S. Mosser	RELAI: Respectful and Explainable AI to Support Struggling People and Mental Health Practitioners	2019 – 2022	NFRF Exploration	$250,000
L. Gonnord, S. Mosser (co-PIs)	CharActerisation of Program Evolution with Static Analyses (CAPESA)	2019 – 2022	Inria (Équipe Associée)	30,000 EUR *(~ $45,000)*
S. Mosser (PI)	UQAM Faculty of Science Startup package	2019 – 2021	UQAM PAFARC	$15,000 *(unionized amount)*
S. Mosser (co-PI), A.-M. Pinna-Déry (co-PI)	Software engineering for the aging population	2019 – 2021	FRQNT (QC), Ministère des affaires étrangères (MAE, FR)	$18,300 + 10,000 EUR *(~ $33,000)*
L. Lizzi (PI) et al (8 co-applicants)	Internet of Things Wireless Infrastructures (I-Win).	2018 – 2019	UCA Initiative of Excellence	36,000 EUR *(~$54,000)*
F. Verdier (PI) et al	Smart IoT for mobility	2018	UCA Initiative of	25,000 EUR

(6 co-applicants)	(Phase I).	– 2019	Excellence	*(~$37,500)*
S. Mosser	Formalising Scalable Composition Operators (FIASCO)	2018	CNRS Research Accelerator	5,000 EUR *(~$7,500)*
M. Blay-Fornarino (co-PI), S. Mosser (co-PI), G. Nolet	Software Composition for the MERMAID	2017 – 2020	Provence - Alpes Côte d'Azur regional research fund	100,000 EUR *(~$150,000)*
P. Collet (co-PI), S. Mosser (co-PI).	Variability in cyber-Physical Systems	2016 – 2020	Industrial contract (VISTEON)	100,000 EUR *(~$150,000)*
B. Benni, S. Mosser (PI)	Modelling Software Composition	2016 – 2019	UCA school of graduate studies	100,000 EUR *(~$150,000)*
S. Mosser (PI)	Modelling for scaling (M4S)	2016	CNRS early career accelerator	10,000 EUR *(~$15,000)*
C. Cecchinel, P. Collet (co-PI), S. Mosser (co-PI	DEPOSIT at scale	2017	European Institute of Innovation and Technology (EIT Digital), industrial transfer program.	35,000 EUR *(~$52,500)*
C. Cecchinel, P. Collet (co-PI), S. Mosser (co-PI)	Tailored composition for large-scale sensing networks	2014 – 2017	UCA school of graduate studies	100,000 EUR *(~$150,000)*
I. Logre, S. Mosser (PI)	Model-based sensor data visualizations	2013 – 2017	UCA school of graduate studies	100,000 EUR *(~$150,000)*
M. Blay-Fornarino (co-PI), S. Mosser (co-PI)	Domain-specific languages & Software Product Line for Cloud-computing (IDOL)	2012 – 2014	European Union international cooperation research fund (EGIDE), Aurora program	20,000 EUR *(~$30,000)*
S. Mosser (PI)	Modelling for Cloud-computing	2012 – 2014	Amazon research sponsorship	25,000 EUR *(~$37,500)*
M. Blay-Fornarino (PI)	YourCast, an *a-la-carte* information broadcasting system	2012 – 2014	*Agence nationale de la recherche* (ANR), Technological Transfer program	250,000 EUR *(~$375,000)*
E. di Nitto (PI) et al (12 universities)	Model-driven approach for design and execution of applications on multiple clouds (MODAClouds)	2011 – 2015	European Union Research Fund, Framework Program 7 (EU-FP7)	8,700,000 EUR *(~$13,000,000)*
Keith Jeffery (PI) et al (17 universities)	A model-based cross cloud development and deployment platform (PaaSage).	2011 – 2016	European Union Research Fund, Framework Program 7 (EU-FP7)	9,700,000 EUR *(~$14,500,000)*
G. Horn (PI) et al (13 universities)	Reuse and Migration of legacy applications to interoperable	2011 –	European Union Research Fund,	4,500,000 EUR *(~$6,750,000)*

	cloud services (REMICS)	2016	Framework Program 7 (EU-FP7)	
A. Solberg (PI) at al (12 universities)	Environmental services infrastructure with ontologies (ENVISION)	2010 – 2013	European Union Research Fund, Framework Program 7 (EU-FP7).	$4,500,000 *(~$6,750,000)*

Funding Applied for

Name(s) (indicate PI, underline your name)	**Title/Purpose of Research**	**Years of Funding**	**Funding Source/Agency**	**Funding amount** (by year)
R. Paige (PI), D. Down (co-PI), S. Mosser (co-PI), V. Pantelic (co-PI)	Automated Software and Performance Engineering for Integrated Transportation Systems	2024 – 2028	NSERC Alliance	$785,000
Milena Head (PI) et al (17 co-applicants)	Aging, Mobility & the Digital Divide: Bridging Digital Divides for Older Adults Through Design	2023 – 2028	MIRA	$200,000

LIFETIME PUBLICATIONS

Institution	**Year**	*Journals*		*Conferences*		*Workshops*	
		International	**National**	**International**	**National**	**International**	**National**
McMaster	*2023*	2		1		2	
	2022	2		3			
UQAM	*2021*	1		3			
	2020	4		4			
	2019	3		2			
UCA	*2018*	2		5		5	
	2017	*In charge of the redesign of the software engineering curriculum at Polytech Sophia*					
	2016			2			
	2015			1		1	
	2014			2		3	
	2013	1		1		4	
SINTEF	*2012*			4	1	5	
Inria	*2011*			5	2	1	
U. Nice *(Ph.D.)*	*2010*	1		1	1		
	2009			1	1	1	
	2008			2	1		1
	2007		1		1	1	1
	Total:	*16*	*1*	*36*	*7*	*21*	*2*

Underlined names are students under my direct supervision for the work done in the publication.

Peer Reviewed

Journal Articles

[J1] M. Levy, E. C. Groen, K. Taveter, D. Amyot, E. Yu, L. Liu, I. Richardson, M. Spichkova, A. Jussli, and **S. Mosser**. Sustaining Human Health: A Requirements Engineering Perspective. *Journal of Systems and Software (JSS)*, *204, pages 111792, 2023,*

[J2] W. K.G. Assunção, J. Krüger, **S. Mosser**, and S. Selaoui. How do microservices evolve? An empirical analysis of changes in open-source microservice repositories. *Journal of Systems and Software (JSS)*, *204, pages 111788, 2023.*

[J3] I. Trabelsi, M. Abdellatif, A. Abubaker, N. Moha, **S. Mosser**, S. Ebrahimi-Kahou, and Y.-G. Guéhéneuc. From legacy to microservices: A type-based approach for microservices identification using machine learning and semantic analysis. *Journal of Software: Evolution and Process (JSEP)*, *2022.*

[J4] **S. Mosser**, V. Reihnarz, and C. Pulgar. Modelling Agile Backlogs as Composable Artefacts to support Developers and Product Owners. Journal of Object Technology (JOT). 2022

[J5] B. Combemale, J. Kienzle, G. Mussbacher, H. Ali, D. Amyot, M. Bagherzadeh, E. Batot, N. Bencomo, B. Benni, J.-M. Bruel, J. Cabot, B. H. C. Cheng, P. Collet, G. Engels, R. Heinrich, J.-M. Jézéquel, A. Koziolek, **S. Mosser**, R. H. Reussner, H A. Sahraoui, R. Saini, J. Sallou, S. Stinckwich, E. Syriani, and M. Wimmer. A Hitchhiker's Guide to Model-Driven Engineering for Data-Centric Systems. IEEE Software. 2021

[J6] S. Bonnieux, D. Cazau, **S. Mosser**, M. Blay-Fornarino, Y. Hello, and G. Nolet. MeLa: A Programming Language for a New Multidisciplinary Oceanographic Float. *MDPI Sensors*, 2020.

[J7] B. Benni, **S. Mosser**, M. Acher, and M. Paillart. Characterizing Black-box Composition Operators via Generated Tailored Benchmarks. *Journal of Object Technology (JOT): special issue ECMFA'20*, June 2020.

[J8] G. Mussbacher, B. Combemale, J. Kienzle, S. Abrahão, H. Ali, N. Bencomo, M. Búr, L. Burgueño, G. Engels, P. Jeanjean, J.-M. Jézéquel, T. Kühn, **S. Mosser**, H. Sahraoui, E. Syriani, D. Varró, and M. Weyssow. Opportunities in Intelligent Modeling Assistance. *Software and Systems Modeling*, 2020.

[J9] B. Combemale, J. Kienzle, G. Mussbacher, H. Ali, D. Amyot, M. Bagherzadeh, E. Batot, N. Bencomo, B. Benni, J.-M. Bruel, J. Cabot, B. H. C. Cheng, P. Collet, G. Engels, R. Heinrich, J.-M. Jézéquel, A. Koziolek, **S. Mosser**, R. Reussner, H. Sahraoui, R. Saini, J. Sallou, S. Stinckwich, E. Syriani, and M. Wimmer. A Hitchhiker's Guide to Model-Driven Engineering for Data-Centric Systems. *IEEE Software*, 2020.

[J10] C. Cecchinel, F. Fouquet, **S. Mosser**, and P. Collet. Leveraging live machine learning and deep sleep to support a self-adaptive efficient configuration of battery powered sensors. *Future Generation Computer Systems (FGS)*, Mar. 2019.

[J11] B. Benni, **S. Mosser**, N. Moha, and M. Riveill. A Delta-oriented Approach to Support the Safe Reuse of Black-box Code Rewriters. *Journal of Software: Evolution and Process (JSEP), ICSR special issue*, July 2019.

[J12] L. Burgeno, F. Ciccozzi, M. Famelis, G. Kappel, L. Lambers, **S. Mosser**, R. Paige, A. Pierantonio, A. Rensink, R. Salay, G. Taentzer, A. Vallecillo, and M. Wimmer. Contents for a Model-Based Software Engineering Body of Knowledge. *Journal of Software and Systems Modeling*, June 2019.

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[J14] B. Combemale, J. Kienzle, G. Mussbacher, O. Barais, E. Bousse, W. Cazzola, P. Collet, T. Degueule, R. Heinrich, J.-M. Jézéquel, M. Leduc, T. Mayerhofer, **S. Mosser**, M. Schöttle, M. Strittmatter, and A. Wortmann. Concern-Oriented Language Development (COLD): Fostering Reuse in Language Engineering. *Computer Languages, Systems and Structures*, 2018.

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[C2] S.H. Hosseini Saravani, L. Normand, D. Maupomé, F. Rancourt, T. Soulas, S. Besharati, A. Normand, **S. Mosser**, and M.-J. Meurs. Measuring the Severity of the Signs of Eating Disorders Using Similarity-Based Models. In *Proceedings of the Working Notes of CLEF 2022 - Conference and Labs of the Evaluation Forum, Bologna, Italy, September 5th - to - 8th, 2022 (CEUR Workshop Proceedings), CEUR-WS.org, 3180, pages 936-946, 2022.*

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[C12] S. Lazreg, M. Cordy, P. Collet, P. Heymans, and **S. Mosser**. Multifaceted Automated Analyses for Variability-Intensive Embedded Systems. In *41st ACM/IEEE International Conference on Software Engineering*, ICSE, May 2019.

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[C14] S. Lazreg, P. Collet, and **S. Mosser**. Assessing the Functional Feasibility of Variability-Intensive Data Flow-Oriented Systems. In *Symposium on Applied Computing (**Best Paper Award**)*, Pau, France, Apr. 2018.

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[C17] **S. Mosser** and J.-M. Bruel. Reconciling Requirements and Continuous Integration in an Agile Context (tutorial). In *International Requirements Engineering Conference*, RE, Aug. 2018.

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graphs composed of multiple time-series. In *Symposium on Applied Computing*, volume 8, Pau, France, Apr. 2018.

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[C20] C. Cecchinel, **S. Mosser**, and P. Collet. Automated Deployment of Data Collection Policies over Heterogeneous Shared Sensing Infrastructures. In *23rd Asia-Pacific Software Engineering Conference*, Hamilton, New Zealand, Dec. 2016.

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[C22] S. Urli, M. Blay-Fornarino, P. Collet, **S. Mosser**, and M. Riveill. Managing a Software Ecosystem Using a Multiple Software Product Line: a Case Study on Digital Signage Systems. In *Euromicro Conference series on Software Engineering and Advanced Applications (SEAA'14)*, Special issue: Software Product Lines and Software Ecosystems, pages 1–8, Verona, Italy, Aug. 2014. Elsevier.

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[N1] F. Chauvel, **S. Mosser**, and A. Solberg. Reconsidering QoS Analysis in Dynamic and Open Systems. In *1ère conférence en ingénierie du logiciel (CIEL'12), short paper*, , Rennes, June 2012.

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[N3] C. Brel and **S. Mosser**. Vers une approche flot de données pour supporter la composition d'interfaces homme-machine. In *Journées sur l'Ingénierie Dirigée par les Modèles(IDM'11)*, pages 1–6, Lille, France, June 2011. CNRS.

[N4] **S. Mosser** and M. Blay-Fornarino. Taming Orchestration Design Complexity through the ADORE Framework. In *Journées 2010 du GDR GPL, CNRS*, Pau, France, Mar. 2010.

[N5] **S. Mosser** and M. Blay-Fornarino. Réflexions autour de la construction dirigée par les modèles d'un atelier de composition d'orchestrations. In *15ème conférence francophone sur les Langages et Modèles à Objets (LMO'09)*, pages 1–16, Nancy, France, Mar. 2009. Cépadues.

[N6] **S. Mosser**, M. Blay-Fornarino, and M. Riveill. Un modèle d'évolution multi-vues des Architectures Orientées Services. In *Actes de l'Atelier Doctorant LMO'08(DOC LMO'08), workshop*, , page 6, Montréal, Mar. 2008. Université de Montréal -.

[N7] **S. Mosser**, M. Blay-Fornarino, P. Collet, and P. Lahire. Vers l'intégration dynamique de contrats dans des architectures orientées services : une experience applicative du modèle au code. In *2ème Conférence sur les Architectures Logicielles (CAL'08)*, pages 1–15, Montréal, Canada, Mar. 2008.

[N8] **S. Mosser**, M. Blay-Fornarino, and M. Riveill. Orchestrations de Services Web : Vers une évolution par composition. In *Atelier RIMEL (Rétro-Ingénierie, Maintenance et Evolution des Logiciels)*, , page 6, Toulouse, France, Mar. 2007. Dalila Tamzalit, Salah Sadou.

[N9] C. Joffroy, **S. Mosser**, M. Blay-Fornarino, and C. Nemo. Des Orchestrations de Services Web aux Aspects. In U. d. T. EMN, INRIA, editor, *3ème Journée Francophone sur le Développement de Logiciels Par Aspects (JFLDPA'2007)*, pages 1–13, Toulouse, France, Mar. 2007.

Non-Peer Reviewed

Community Engagement and Knowledge Exchange

- **S. Mosser**. *La Thèse …* (seminar for new Ph.D. Students at Inria Lille – Nord Europe). 2011.

Submitted for Publication

[S1] S. Arulhoman, S. Mosser, M.-J. Meurs. Using CRF to extract conceptual models from product backlogs. Submitted to Canadian AI. June 2023.

PRESENTATIONS AT MEETINGS

Keynotes

[K1] A. Lachance and **S. Mosser**. Developing a modular language server to support P4 developers. P4 developers days meeting, September 2023.
[K2] **S. Mosser**. From Software Composition at Scale to Scaling software composition: 50 shades of scalability. Consortium for Software Engineering Research (CSER) 2022 Spring Meeting. May 2022.
[K3] B. Benni and **S. Mosser**. Applying Software Composition to the Docker Ecosystem. Amadeus Global Tech Forum. **Keynote**. Oct. 2018
[K4] **S. Mosser**. Renforcer l'engagement étudiant en projet. Journées sur la pédagogie active, Université Bretagne-Loire. **Keynote**. July 2017.
[K5] **S. Mosser**. Projets, Agilité & École d'Ingénieur. Journées sur l'Innovation Pédagogique, Université du Maine. **Keynote**. Mar. 2017.

Invited

[P1] **S. Mosser**. Teaching Modelling, Modelling Teaching. The MDE Network, Mar. 2023.
[P2] **S. Mosser**. Dockerizing your Teaching: Do's and Don'ts. The MDE Network, Mar. 2022
[P3] **S. Mosser**. Software Composition in a Cyber-Physical World. Canada-Norway collaboration, Østfold College, Mar 2022.
[P4] **S. Mosser**. *Génie Logiciel pour la Population Vieillissante*. La France à l'UQAM, Feb. 2022.
[P5] **S. Mosser**. Software Composition for the IoT & Cloud. Canada Border Services Agency (PD&DD, BTID), Dec. 2021.
[P6] **S. Mosser**. Justification Diagrams in a DevOps Context. Model-driven Engineering & Requirements Engineering working groups, CNRS. Dec. 2021.
[P7] **S. Mosser**. Building a CI/CD pipeline (demo*). Association Générale des Étudiantes et Étudiants en Informatique de l'UQAM* (Invited seminar). Dec. 2021.
[P8] **S. Mosser**. *User stories & Acceptance Testing*. Canada Border Services Agency (PD&DD, BTID), Nov. 2021.
[P9] **S. Mosser**. Building Software for the Ageing Population: A Software Engineering Point of View. Smart Mobility for the ageing Population (sMAP) research seminar, Canada. Oct. 2021.
[P10] **S. Mosser**. Docker in a CI/CD context. Canada Border Services Agency (PD&DD, BTID), Oct. 2021.
[P11] **S. Mosser**. Anaximander, a lightweight approach to support software exploration. Working group on software adaptation (YODA), *Centre National de la Recherche Scientifique* (CNRS). Feb. 2021.
[P12] **S. Mosser**. Using a project-based approach to support Software Engineering teaching. LATECE seminar, UQAM, Montréal, Canada. Feb. 2020.
[P13] **S. Mosser**. How can models help data scientists? Lessons learned from an undercover agent. 2nd Winter Modelling Meeting. San Vigilo de Marrebe, Italy. Feb. 2020.
[P14] **S. Mosser**. Software Composition in a Cyber-Physical World. Ptidej Research Seminar, Concordia University, Montréal, Canada. Dec. 2019. Concordia
[P15] **S. Mosser**. Les aspects génie logiciel pour les Systèmes Cyber-Physique. In *Journées IIoT du GDR MACS, CNRS*, France, July 2018.
[P16] V. Aranega, A. Etien, and **S. Mosser**. Using Feature Model to build Model Transformation Chains. In *Journées 2013 du GDR GPL, CNRS*, France, Mar. 2013.
[P17] **S. Mosser**, G. Mussbacher, M. Blay-Fornarino, and D. Amyot. Une approche orientée aspect allant du modèle d'exigences au modèle de conception. In *Journées du GDR GPL*, pages 37–38, Lille, France, June 2011.

PATENTS, INVENTIONS AND COPYRIGHTS

2014 "*Assets logiciels utilisés pour réaliser un Système de Diffusion d'Information - YourCast*". Mireille Blay-Fornarino, Simon Urli, **Sébastien Mosser** and Daniel Romero. *Agence de la Protection des Programmes* (APP) IDDN.FR.001.320001.000.S.C.2014.000.31235, France.

2010 "*Diffusion d'informations par composition - JSEDUITE*". **Sébastien Mosser**, Mireille Blay-Fornarino, Michel Riveill and David Emsellem. *Agence de la Protection des Programmes* (APP) IDDN.FR.001.120009.000.S.P.2011.000.00000, France.

SOFTWARE AND DATASETS

2023 S. Arulmohan, **S. Mosser** and M.-J. Meurs. **Qualified user stories (ground truth, Visual Narrator, GPT-3.5, CRF)**. Version 1.0 (11/07/2023). http://doi.org/10.5281/zenodo.8136975
2023 jPipe. A software language to justify CICD pipelines. https://github.com/ace-design/jpipe
2023. p4-lsp. A language server to support P4 developers. https://github.com/ace-design/p4-lsp

ADMINISTRATIVE RESPONSIBILITIES

Department

07/23 - ,..,	Software Engineering Curriculum Committee	(chair)
01/22 - …	Undergraduate advisor for Software Engineering	(appointed)
05/23 – 08/23	Hiring committee, teaching-track & CLA	(member)
01/22 – 06/23	Software Engineering Curriculum Committee	(member)

Faculty

11/22 - … Ad hoc Selection Committee, Associate Dean – Academic.

University

N/A

ADMINISTRATIVE RESPONSIBILITIES OUTSIDE OF MCMASTER (until 2022)

Department

2020 – 2021 Vice-chair of the M.Sc. in Software Engineering (UQAM). *Elected*.
2019 – 2021 Deputy chair of the B.Sc. in Comp. Science and Soft. Engineering (UQAM). *Elected*.
2014 – 2018 Computer Science department executive board (UCA). *Elected*.
2013 – 2018 Director of the M.Sc. in Software Architecture (UCA). *Appointed*.
2012 – 2018 Coordinator of project-based teaching for software engineering (UCA). *Appointed*.

Faculty

2018 Executive board of the Computer Science Research Center (I3S, UCA/CNRS). *Appointed*.

University

2020 – 2021 *Comité Apprentissage Recherche* (CAR, advising on digital strategy & IT). UQAM

OTHER RESPONSIBILITIES

SE@MTL Together with J. Kienzle (McGill), F. Bordeleau (ÉTS) and H. Sahraoui (UdeM), we founded in 2019 the *Software Engineering at Montreal* community to animate the local research ecosystem by organizing monthly seminars that bring together ~30 participants