

# Mircea F. Lungu, PhD

## Curriculum Vitæ

September 9, 2016  
<http://mir.lu/cv>

### Experience

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- 2015 – ... **Assistant Professor**  
*Software Engineering and Architecture Group, Johann Bernoulli Institute, University of Groningen*  
Preparing lectures in Software Engineering and Introduction to Data Science. Continuing previous research in software evolution and empirical software engineering. Establishing inter-disciplinary projects with colleagues from cognitive science, experimental psychology and linguistics. Member of the Pioneers group of the Data Science and Systems Complexity programme.
- 2010 – 2015 **Senior Researcher & Lecturer**  
*Software Composition Group, Faculty of Informatics, University of Bern*  
Co-leading with Oscar Nierstrasz the SCG research group working at the intersection of Software Evolution and Programming Languages. Mentoring and co-supervising a dozen bachelor, masters and PhD theses. Outreach activities involving teaching children to program robots.
- 2012 **Visiting Scientist**  
*Department of Informatics, University of California, Irvine*  
Bridging two software analysis infrastructures: Sourcerer developed at UCI and SoftwareNaut developed at the University of Bern and University of Lugano.
- 2007 **Co-op Intern**  
*IBM TJ Watson Research Center, NY*  
Working together with the software visualization group lead by Dr. Wim De Pauw and the distributed systems group represented by Dr. Anand Ranganathan. Integrating tools developed in the respective research groups.
- 2004 – 2010 **PhD Student, Postdoctoral Researcher**  
*Faculty of Informatics, University of Lugano*  
Conducting research in software evolution, visualization, and large scale software analysis. One of the first researchers to write a thesis on Software Ecosystems, currently a lively research field which spans business and technology.

## Education

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- 2009 **PhD**  
Faculty of Informatics, University of Lugano  
Dissertation: *Reverse Engineering Software Ecosystems*  
Advisor: Prof. Dr. Michele Lanza
- 2004 **Dipl. -Ing.**  
Computer Science Department, Polytechnic University of Timisoara  
Thesis: *Conformity Strategies - Measures of Software Design Rules*  
Supervisors: Prof. Dr. Radu Marinescu, Dr. Tudor Girba

## Honours And Awards (Selected)

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- 2016 – **Steering Committee Member of SATToSE**  
SATToSE, the Seminar Series on Advanced Techniques and Tools for Software Evolution, is a yearly event that brings together researchers in software evolution from the entire world.
- 2014 – 2015 **Vice-President of CHOOSE**  
The Swiss Group for Object Oriented Systems and Environments. I have been involved for many years in the CHOOSE Board, and being nominated as a vice-president was an honor.
- 2013 **OOPSLA Best Reviewer Award**  
The ACM SIGPLAN Conference on Systems, Programming, Languages and Applications. Although there was a lot of work, I could have not done such a good job without the help of my group.
- 2010 **IWPSE-EVOL Best Paper Award**  
With Lile Hattori at IWPSE-EVOL 2010 for *Replaying Past Changes in Multi-Developer Projects*. The work is a unique combination of engineering and empirical science.
- 2007 **ESUG Innovation Award**  
1st Prize at the ESUG Innovation Awards for the *Small Project Observatory* a platform for the monitoring and analysis of software ecosystems. The award is an industrial recognition of a research project.

## Research Grants

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- <sup>16</sup> DSSC *Information processing underlying the interactions between brain areas*, with M. Vugt, M. Cao, funded by the Centre for Data Science and Systems Complexity of the University of Groningen with EUR 150.000
- <sup>15</sup> Ubbo Emmius *Technical Debt in Open-Source Software Projects*, with A. Chatzigeorgiou, P. Avgeriou, funded by the Centre for Data Science and Systems Complexity of the University of Groningen with EUR 150.000
- <sup>13</sup> ASA *Agile Software Assessment*, written with O. Nierstrasz, was funded by the Swiss NSF with CHF 600.000 (project # 200020-144126/1)

## Outreach Activities

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I list here activities that span a border, be it academia-industry, academia-society, or the border between different research disciplines.

2015 – ... **The Data Science and Complex Systems Center  
Pioneer**

The DSSC center represents an interdisciplinary cluster of research groups at the Faculty of Mathematics and Natural Sciences of the University of Groningen. The pioneers are regularly meeting in order to discover opportunities for synergy within the DSSC but across institutes. Writing a new research project in collaboration with Marieke Van Vugt and Ming Cao from Artificial Intelligence and Engineering.

2013 – ... **The Workshop on Software Ecosystem Architectures  
Co-Organizer**

The international workshop co-organized with Jens Knodel from Fraunhofer Institute and a varying cast of several other international experts in the field, brings together researchers and practitioners who have an interest in software engineering but also the business aspects of software.

2012 – 2014 **The CHOOSE Forum  
Co-organizer**

The CHOOSE forum is an yearly event in which practitioners and researchers from Software Engineering come together to exchange information and share knowledge. For three years in a row we organized the forum at the University of Bern together with Tudor Girba, Oscar Nierstrasz, and a varying cast from industry and academia.

2013 – 2014 **Robot Programming Courses  
Instructor**

Together with my colleague Jan Kurs at the University of Bern, we organized multiple meetings with students from the International Highschool in Bern in which we introduced them to programming the LEGO Mindstorms robots.

2013 – ... **The Zeeguu Language Learning Platform  
Project-Lead**

I am currently lead architect and designer for the open source language learning platform called Zeeguu. The platform aims to support seamless vocabulary acquisition by enabling the readers to read only those texts that they are passionate about.

2006 – 2009 **PhD Pizza Talks  
Co-organizer**

While at the University of Lugano, in Switzerland, I organized together with Dr. Cyrus Hall (currently at Twitch/Amazon), a weekly inter-disciplinary meeting for PhD students from different domains to come together and present their work for a broad audience. Free pizza was provided to encourage a numerous participation.

## Professional Activities (Selected)

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### Program Chair

- '16 SATTOSE 9<sup>th</sup> International Seminar on Advanced Techniques & Tools for Software Evolution, Bergen, Norway
- '16 ICPC 24<sup>th</sup> IEEE International Conference on Program Comprehension (TD)
- '14 VISSOFT IEEE Working Conference on Software Visualization (ERA)
- '12 CSMR European Conference on Maintenance & Reengineering (TD)
- '11 WCRE International Conference on Reverse Engineering (TD)

### Co-Organizer

- '12,'13,'14 CHOOSE Forum Yearly event that brings together the SE Industry and Research with Tudor Girba and Michele Lanza (University of Lugano)
- '13,'14 WEA International Workshop on Software Ecosystem Architectures with Jens Knodel (Fraunhofer Institute)
- '13 SATTOSE Seminar on Advanced Techniques in Software Engineering with Oscar Nierstrasz (University of Bern)
- '06–'09 USI PhD Talks Interdisciplinary research presentations of PhD students with Cyrus Hall (Amazon)

### Conference PC Member

- '15,'16 SANER 22nd Int. Conf. on Software Analysis, Evolution and Reengineering
- '13 OOPSLA Conference on Systems, Programming, Languages and Applications
- '12,'14 ICSE Int. Conf. on Software Engineering (TD)
- '14,'17 ICPC Int. Conf. on Program Comprehension
- '12,'13,'14 WCRE Int. Conf. on Reverse Engineering
- '11,'12,'14 ICSME Int. Conf. on Software Maintenance & Evolution (TD,ERA)
- '14,'15 MSR Int. Conf. on Mining Software Repositories
- '11 ESEC/FSE European Software Engineering/ACM SIGSOFT Symposium on the Foundations of Software (TD)

### Journal Reviewer

- TSE IEEE Transactions on Software Engineering
- JSME Software Maintenance and Evolution
- EMSE Empirical Software Engineering
- JSS Journal of Systems and Software
- SCP Science of Computer Programming
- IEEE Software The IEEE Software Magazine
- JOT Journal of Object Technology

### External Expert

- NWO Netherlands Organization for Scientific Research
- EU European Commission's FP7 Programme

## Undergraduate And Graduate Lectures

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1. **Introduction to Data Science**  
BSc, University of Groningen, Fall 2016
2. **Software Engineering I & II (Including Project)**  
BSc, University of Groningen, Spring 2016
3. **Software Engineering**  
BSc, University of Bern, Fall 2013, Fall 2014
4. **Compiler Construction**  
MSc, University of Bern, Spring 2013
5. **Concurrency: State Models and Design Patterns**  
MSc, University of Bern, Fall 2012
6. **Software Design and Evolution**  
MSc, University of Bern, Spring 2012, Fall 2014
7. **Principles of GUI Design**  
BSc, University of Lugano, BSc, Spring 2011
8. **Human Computer Interaction**  
BSc, University of Lugano, 2008
9. **Programming Fundamentals (I+II)**  
BSc, University of Lugano, 2005 – 2007, (Teaching Assistant)

## Supervised Theses (Selected)

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These are several of the theses (BSc, MSc, PhD) that I supervised or co-supervised over the years:

1. **Analysis of Technical Debt in Open-Source Software Projects**, G. Digkas. (PhD)  
U. Groningen (in progress, co-supervised with A. Chatzigeorgiou and P. Avgeriou)
2. **Agile Parsing**, J. Kurs. (PhD)  
U. Bern (in progress, co-supervised with O. Nierstrasz)
3. **Mining the Ecosystem to Improve Developer Tools**, B. Spasojević. (PhD)  
U. Bern (in progress, co-supervised with O. Nierstrasz)
4. **Fine Grained Bug Pattern Detection and Prediction**, H. Osman. (PhD)  
U. Bern (in progress, co-supervised with O. Nierstrasz)
5. **Agile Specification of Architectural Constraints**, A. Caracciolo. (PhD)  
U. Bern 2016 (co-supervised with O. Nierstrasz)
6. **Making Reading in a Second Language More Enjoyable**, J. Oosterhof. (BSc)  
U. Groningen 2016
7. **Accelerating Fact Learning with a Smartwatch**, N. Haan and R. Neinhuis. (BSc)  
U. Groningen 2016
8. **Hikomsys: Gamifying Software Analysis**, D. Rahm. (BSc)  
U. Bern 2015
9. **Quicksilver: A Framework for Hierarchical Data Analysis**, D. Schenk. (MSc)  
Bern (2014)

10. **Developer Information Needs in Software Ecosystems**, N. Haenni. (MSc)  
Bern (2014)
11. **Second Language Acquisition Through Free Reading**, S. Marti. (BSc)  
Bern (2013)
12. **St1-PL/1 Extracting quality information from PL/1 legacy ecosystems**, E. Aeschli-  
mann. (MSc)  
Bern (2013)
13. **Developer-Centric Analysis of SVN Ecosystems**, J. Malnati. (MSc)  
Lugano (2009)

## Peer-Reviewed Publications (Selected)

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*H-index*: 19. These and further publications are available online at <http://scg.unibe.ch/staff/mircea/pubs> or on the Google Scholar website.

### Journal Articles

1. **Bounded seas**  
Jan Kurs, Mircea Lungu, Rathesan Iyadurai, and Oscar Nierstrasz  
In In Computer Languages, Systems & Structures 44 p. 114-140, 2015
2. **Predicting dependences using domain-based coupling**  
Amir Aryani, Fabrizio Perin, Mircea Lungu, Abdun Naser Mahmood, and Oscar Nierstrasz  
In Journal of Software: Evolution and Process 26(1), p. 50-76, 2014
3. **(\*) Evolutionary and Collaborative Architecture Recovery with Softwareaut**  
Mircea Lungu, Michele Lanza, and Oscar Nierstrasz.  
In Science of Computer Programming 79(0) p. 204 - 223, 2014
4. **(\*) Answering software evolution questions: An empirical evaluation**  
Lile Hattori, Marco D'Ambros, Michele Lanza, and Mircea Lungu  
In Information and Software Technology 55(4) p. 755 - 775, January 2013
5. **Incremental Dynamic Updates with First-class Contexts**  
Erwann Wernli, Mircea Lungu, and Oscar Nierstrasz  
In Journal of Object Technology 12(3) p. 1:1-27, 2013
6. **Seuss: Decoupling static method responsibilities for fine-grained configurability**  
Niko Schwarz, Mircea Lungu, and Oscar Nierstrasz  
In Journal of Object Technology 11(1), 2012
7. **On Porting Software Visualization Tools to the Web**  
Marco D'Ambros, Michele Lanza, Mircea Lungu, and Romain Robbes  
In Journal on Software Tools for Technology Transfer 13 p. 181 - 200, 2011
8. **(\*) The Small Project Observatory: Visualizing Software Ecosystems**  
Mircea Lungu, Michele Lanza, Tudor Gîrba, and Romain Robbes  
In Science of Computer Programming, Elsevier 75(4) p. 264-275, 2010
9. **Visualizing Co-Change Information with the Evolution Radar**  
Marco D'Ambros, Michele Lanza, and Mircea Lungu  
In Transactions on Software Engineering (TSE) 35(5) p. 720 - 735, 2009

## Refereed Papers in International Conferences

1. **Tracking Null Checks in Open-Source Java Systems**  
Haidar Osman, Manuel Leuenberger, Mircea Lungu, and Oscar Nierstrasz  
In SANER'16 – Proceedings of the 23rd IEEE International Conference on Software Analysis, Evolution, and Reengineering, p. 304-313. IEEE Computer Society
2. **A Case Study on Type Hints in Method Argument Names in Pharo Smalltalk**  
Boris Spasojević, Mircea Lungu, and Oscar Nierstrasz  
In SANER'16 – Proceedings of the 23rd IEEE International Conference on Software Analysis, Evolution, and Reengineering, p. 283-292. IEEE Computer Society
3. **A Unified Approach to Architecture Conformance Checking**  
Andrea Caracciolo, Mircea Lungu, and Oscar Nierstrasz  
In WICSA'15 – Proceedings of the 12th Working IEEE/IFIP Conference on Software Architecture , p. 41-50. ACM Press
4. **Mining frequent bug-fix code changes**  
Haidar Osman, Mircea Lungu, and Oscar Nierstrasz  
In CSMR-WCRE'14 – Proceedings of the IEEE Conference on Software Maintenance, Reengineering and Reverse Engineering , p. 343-347. IEEE Computer Society
5. **How Do Software Architects Specify and Validate Quality Requirements?**  
Andrea Caracciolo, Mircea Lungu, Oscar Nierstrasz  
In ECSA'14 – Proceedings of the 8th European Conference on Software Architecture , p. 374 – 389. Springer LNCS Vol. 8627
6. (\*) **Mining the Ecosystem to Improve Type Inference for Dynamic Languages**  
Boris Spasojevic, Mircea Lungu, Oscar Nierstrasz  
In Onward!'14 – Proceedings of the 2014 ACM International Symposium on New Ideas, New Paradigms, and Reflections on Programming & Software , p. 133-142. ACM
7. **Bounded Seas – Island Parsing Without Shipwrecks**  
Jan Kurs, Mircea Lungu, Oscar Nierstrasz  
In SLE'14 – Proceedings of the 7th International Conference on Software Language Engineering , p. 62-81. LNCS Vol. 8706
8. **Analyzing PL/1 legacy ecosystems: An experience report**  
Erik Aeschlimann, Mircea Lungu, Oscar Nierstrasz, Carl F. Worms  
In WCRE'13 – Proceedings of the 20th Working Conference on Reverse Engineering , p. 441-448. IEEE Computer Society
9. (\*) **How Do Developers React to API Deprecation?**  
Romain Robbes, Mircea Lungu, and David Roetlisberger  
In FSE'12 – Proceedings of the 20th International Symposium on the Foundations of Software Engineering , p. 56:1 – 56:11. ACM
10. **On How Often is Code Cloned Across Repositories**  
Niko Schwarz, Mircea Lungu, and Romain Robbes  
In ICSE'12 – Proceedings of the 34th International Conference on Software Engineering , p. 1289-1292. IEEE Computer Society
11. **Incremental Dynamic Updates with First-class Contexts**  
Erwann Wernli, Mircea Lungu, and Oscar Nierstrasz  
In TOOLS'12 – Proceedings of the 50th international conference on Objects, Components, Models and Patterns, p. 304-319. LNCS Vol. 7304

12. **Software Evolution Comprehension: Replay to the Rescue**  
Lile Hattori, Marco D'Ambros, Michele Lanza, and Mircea Lungu  
In ICPC'11 – Proceedings of the 19th International Conference on Program Comprehension,  
p. 161–170. IEEE Computer Society
13. **Flexible object layouts: language extensions by intercepting slot access**  
Toon Verwaest, Camillo Bruni, Mircea Lungu, and Oscar Nierstrasz  
In OOPSLA'11 – Proceedings of the 2011 ACM international conference on Object oriented  
programming systems languages and applications , p. 959–972. ACM
14. **Exploring Inter-Module Relationships in Evolving Software Systems**  
Mircea Lungu and Michele Lanza  
In CSMR'07 – Proceedings of the 11th European Conference on Software Maintenance and  
Reengineering , p. 91–100. IEEE Computer Society
15. **Reverse Engineering Super-Repositories**  
Mircea Lungu, Michele Lanza, Tudor Gîrba, and Reinout Heeck  
In WCRE'07 – Proceedings of th 14th Working Conference on Reverse Engineering, p. 120–  
129. IEEE Computer Society
16. **An Approach to Software Evolution Based on Semantic Change**  
Romain Robbes, Michele Lanza, and Mircea Lungu  
In FASE'07 – Proceedings of 10th International Conference on Fundamental Approaches to  
Software Engineering, p. 27–41. Springer
17. **Mondrian: An Agile Visualization Framework**  
Michael Meyer, Tudor Gîrba, and Mircea Lungu  
In SoftVis'06 – ACM Symposium on Software Visualization, p. 135–144. ACM

## Invited Talks (Selected)

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Selected talks highlight the international activity. Conference presentations are not included.

- 2015 **Agile Software Assessment**  
Simula Research Laboratory, Norway
- 2014 **Software Ecosystems: Challenges and Opportunities**  
Universidad Diego Portales, Chile
- 2013 **Program Comprehension Across Levels of Abstraction**  
University of California Irvine, United States
- 2012 **Source Code is Data Too (Keynote)**  
Smalltalks 2012, Puerto Madryn, Argentina
- 2010 **An Introduction to Ecosystem Analysis**  
Summer School on Programming Languages, Antofagasta, Chile

## Personal Information

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Fluent:	English, French, Italian, Romanian
Intermediate:	German
Beginner:	Dutch
Sports	Triathlon, Tennis



## References

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