



# giovannigrano

ph.d. student & software engineer

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## languages

Italian: *mother tongue*  
English: *fluent*  
German: *beginner*

## programming

Java, Python  
Swift, Bash  
R,  $\text{\LaTeX}$   
COBOL

## publication indexes

Google Scholar  
DBLP

## open source

GitHub

## about

I was born in Campobasso (Italy) on April, 24th, 1990. I received (cum laude) the Bachelor's Degree in Computer Science from the University of Molise (Italy) in 2013, advised by Prof. Rocco Oliveto. Afterwards I moved to the University of Salerno, where in 2015 I received my Master's Degree (cum laude) in Computer Science, advised by Prof. Andrea De Lucia, defending a thesis on Search Based Software Testing.

Just after my M.Sc. I worked for one year as IT Analyst and Developer at Cedacri S.p.A., as a developer for the banking sector. In November 2016 I started my Ph.D., joining the s.e.a.l. group at the University of Zurich.

My main research interests include Search-Based Software Engineering (SBSE), with a main focus on Search-Based Software Testing (SBST), Software maintenance and evolution and Empirical Software Engineering.

## education

- |               |  |   |
|---------------|--|---|
| 11.16 - →     | <b>Ph.D. Student</b> in Informatics<br>Research Assistant in Software Evolution and Architecture Lab (s.e.a.l.) of the Prof. Harald Gall   | <a href="#">University of Zurich, Switzerland</a> |
| 09.13 - 09.15 | <b>M.Sc.</b> in Computer Science<br>Final grade: 110/110 <i>cum laude</i><br><i>"Implementation and comparison of novel techniques for automated search based test data generation"</i> advised by Prof. Andrea De Lucia | <a href="#">University of Salerno, Italy</a>      |
| 09.09 - 07.13 | <b>B.Sc.</b> in Computer Science<br>Final grade: 110/110 <i>cum laude</i>  | <a href="#">University of Molise, Italy</a>       |

## experience

- |               |  |  |
|---------------|--|--|
| 02.18 - 03.18 | <b>Research Visit</b><br>Work that lead on the IEEE Transaction on Software Engineering paper "Testing with Fewer Resources: An Adaptive Approach to Performance-Aware Test Case Generation"   | <a href="#">TU Delft, the Netherlands</a>    |
| 10.15 - 9.16  | <b>IT Analyst and Developer</b><br>Cedacri is the most important Italian company specialized in outsourcing services for the banking sector. I worked as an IT Analyst and Software Developer, mainly developing in C#, JavaScript and COBOL.  | <a href="#">Cedacri S.p.A., Italy</a>        |
| 3.15 - 9.15   | <b>Temporary Research Fellow</b><br>My work consisted on support the design of test environments with integration of methodologies for test scenarios generation. I collaborated to the design and implementation of OCELOT, a tool for search-based automated test case generation for C language | <a href="#">University of Salerno, Italy</a> |

## awards

03.18	<b>SANER 2018</b> Best Tool Paper Demo Award	Campobasso, Italy
09.17	<b>HackZurich 2017</b> 1st Place Esri Award @ HackZurich 2017	Zurich, Switzerland
05.15	<b>ICSE 2015 SCORE-IT Award</b> Finalist of SCORE-IT context during ICSE 2015	Florence, Italy

## publications

### journals

Testing with Fewer Resources: An Adaptive Approach to Performance-Aware Test Case Generation

Giovanni Grano, Christoph Laaber, Annibale Panichella, and Sebastiano Panichella

*IEEE Transactions on Software Engineering (to appear). IEEE, to appear*

Lightweight Assessment of Test-Case Effectiveness using Source-Code-Quality Indicators

Giovanni Grano, Fabio Palomba, and Harald Gall

*IEEE Transactions on Software Engineering (to appear). IEEE, to appear*

Scented Since the Beginning: On the Diffuseness of Test Smells in Automatically Generated Test Code

Giovanni Grano, Fabio Palomba, Dario Di Nucci, Andrea De Lucia, and Harald Gall

*Journal of Systems and Software (July 2019). 2019*

Branch Coverage Prediction in Automated Testing

Giovanni Grano, Timofey V. Titov, Sebastiano Panichella, and Harald C. Gall

*Journal of Software: Evolution and Process (Feb. 2019). 2019*

A Large-Scale Empirical Exploration on Refactoring Activities in Open Source Software Projects

Carmine Vassallo, Giovanni Grano, Fabio Palomba, Harald Gall, and Alberto Bacchelli

*Science of Computer Programming (May 2019). Elsevier, 2019*

### conferences and workshops

A New Dimension of Test Quality: Assessing and Generating Higher Quality Unit Test Cases

Giovanni Grano

*Proceedings of the 27th ACM SIGSOFT International Symposium on Software Testing and Analysis, 2019*

On the Effectiveness of Manual and Automatic Unit Test Generation: Ten Years Later

Domenico Serra, Giovanni Grano, Fabio Palomba, Filomena Ferrucci, Harald Gall, and Alberto Bacchelli

*Proceedings of the 16th International Conference on Mining Software Repositories, 2019, Montreal, Canada*

Exploring the Integration of User Feedback in Automated Testing of Android Applications

Giovanni Grano, Adelina Ciurumelea, Sebastiano Panichella, Fabio Palomba, and Harald Gall

*IEEE 25th International Conference on Software Analysis, Evolution and Reengineering, SANER 2018, Campobasso, Italy, 2018*

An Empirical Investigation on the Readability of Manual and Generated Test Cases

Giovanni Grano, Simone Scalabrino, Rocco Oliveto, and Harald Gall

*Proceedings of the 26th International Conference on Program Comprehension, ICPC, Gothenburg, Sweden, 2018*

## [MaLTaSQuE] How High Will It Be? Using Machine Learning Models to Predict Branch Coverage in Automated Testing

Giovanni Grano, Timofey Titov, Sebastiano Panichella, and Harald Gall

*MaLTaSQuE (Workshop on Machine Learning Techniques for Software Quality Evaluation)*, Campobasso, Italy, 2018

## BECLoMA: Augmenting Stack Traces with User Review Information

Lucas Pelloni, Giovanni Grano, Adelina Ciurumelea, Sebastiano Panichella, Fabio Palomba, and Harald Gall

*IEEE 25th International Conference on Software Analysis, Evolution and Reengineering, SANER 2018, Campobasso, Italy*, 2018

## OCELOT: A Search-Based Test Data Generation Tool for C

Simone Scalabrino, Giovanni Grano, Dario Di Nucci, Michele Guerra, Andrea De Lucia, Harald C Gall, and Rocco Oliveto

*Proceedings of the 33rd IEEE/ACM International Conference on Automated Software Engineering (ASE) 2018*, 2018, Montpellier, France

## Android Apps and User Feedback: A Dataset for Software Evolution and Quality Improvement

Giovanni Grano, Andrea Di Sorbo, Francesco Mercaldo, Corrado A. Visaggio, Gerardo Canfora, and Sebastiano Panichella

*Proceedings of the 2Nd ACM SIGSOFT International Workshop on App Market Analytics*, 2017, Paderborn, Germany

## Search-Based Testing of Procedural Programs: Iterative Single-Target or Multi-target Approach?

Simone Scalabrino, Giovanni Grano, Dario Di Nucci, Rocco Oliveto, and Andrea De Lucia

*Search Based Software Engineering - 8th International Symposium, SSBSE 2016, Raleigh, NC, USA, October 8-10, 2016, Proceedings*, 2016

## teaching

### supervised students

2017

**Lucas Pelloni**

[Bachelor Student, University of Zurich](#)

GUI usability and testing of mobile applications

### assistant

2019

Informatik 1, Teaching Assistant - University of Zurich

2018

Informatik 1, Teaching Assistant - University of Zurich

2017

Informatik 1, Teaching Assistant - University of Zurich

Software Maintenance and Evolution, Teaching Assistant - University of Zurich

2017

Software Praktikum, Teaching Assistant - University of Zurich

## professional services

### conferences

2019

**ICSME** (sub-reviewer)

2018

**MSR** (sub-reviewer), **SANER** (sub-reviewer)

2017 ASE (sub-reviewer), SATToSe (sub-reviewer)

## journal referee

<b>EMSE</b>	Empirical Software Engineering: An International Journal, Springer
<b>JSS</b>	Journal of Systems and Software, Elsevier
<b>JSEP</b>	Journal of Software: Evolution and Process, Wiley

## grants

09.19	<b>SIGSOFT CAPS</b> Grant to present a journal first paper at ASE 2019	500 USD
07.19	<b>CHOOSE Grant</b> Grant to attend the Doctoral Symposium at ISSTA 2019	500 CHF
02.18	<b>CHOOSE Grant</b> Grant to present a research paper at SANER 2018	500 CHF
12.17	<b>GRC Travel Grant</b> Grant for a research stay of 1 month in Delft University of Technology, the Netherlands	1,200 CHF