Dario Di Nucci

Name: Dario Di Nucci **Date of Birth:** 3rd September, 1988 **Place of Birth:** Isernia, Italy	**Address:** via Raffaele Iorio 27, 86170 Isernia (IS), Italy **Phone:** +39 333 340 3254 **E-mail:** ddinucci@unisa.it **Website:** http://dardin88.github.io

Skills

Operating Systems	Linux, Windows, macOS
Programming Languages	C, Java, JavaScript, Matlab, R, Python
Web-oriented Languages	HTML, CSS, PHP
Database Languages	SQL, PostgreSQL
Control version systems	Git, Subversion
bug tracking systems	Bugzilla, JIRA
Others	LaTeX, UML, Data Mining, Data Warehousing, Information Retrieval

Language Skills

Italian	Mother tongue
English	B2

Software Projects

2017 — **PETrA**
http://tinyurl.com/je2nxkd
PETrA is a software able to estimate the energy consumption of method calls in Android apps. It is based on some Android tools that are Monkey, Batterystats, Systrace, and dmtracedump.

2015 — **Landfill**
http://www.sesa.unisa.it/landfill
Landfill is a Web-based platform for sharing code smell datasets. It also provides a set of APIs for programmatically accessing its data. Anyone can contribute by: improving existing datasets or sharing and posting new datasets.

2014 — **Gnome maps**
https://wiki.gnome.org/Apps/Maps
Gnome Maps is a map application for GNOME.

GraphHopper
https://graphhopper.com
GraphHopper offers memory efficient algorithms in Java for routing on graphs. E.g. Dijkstra and A* but also optimized road routing algorithms like Contraction Hierarchies. It stands under the Apache License and is build on a large test suite.

Work Experience

04/2014–09/2014 **Software Developer**
Gnome and GraphHopper
Google Summer of Code 2014 working on Gnome Maps and GraphHopper.

09/2011–01/2012 **Software Developer**
CercAziende.it, Venafro, Italy
Development of a search engine for indexing and searching data on a MySQL database.

11/2005–12/2005 **Software Developer**
eliquidMEDIA International Inc., Windsor, ON, Canada
Web development and customer relationship handling.

Education

2017/06 **International Summer School on Software Engineering (ISSSE)**
University of Salerno, Fisciano, Italy

2017/03 – 2017/05 **Visiting Student**
Delft University of Technology, The Netherlands
Supervision: Prof. Andy Zaidman

2016/05 – 2016/07 **Visiting Student**
Delft University of Technology, The Netherlands
Supervision: Prof. Andy Zaidman

2016/06 **International Summer School on Software Engineering (ISSSE)**
University of Salerno, Fisciano, Italy

2015/09 **International Summer School on Software Engineering (SE School@unibz)**
Free University of Bolzano, Bolzano, Italy

2014/12 - Actual **Doctor of Philosophy (Ph.D.) Program in Management & Information Technology**
University of Salerno, Italy
Fully funded by University of Salerno. Advisor: Prof. Andrea De Lucia

2013/03 – 2013/03 **Erasmus IP Human-Machine Interaction**
Reims, France

2011/10 – 2014/09 **Master's Degree (M.Sc.) in Computer Science**
University of Salerno, Italy
110/110 cum laude

2007/10 – 2011/05 **Bachelor's Degree (B.Sc.) in Computer Science**
University of Molise, Italy
110/110 cum laude

Certifications

2014 **Professional practice examination for the engineering license**

2006 **Preliminary English Test (PET)**

RESEARCH INTERESTS

My research activities are mainly focused on maintenance and testing of software systems. In details my research interest are:

- **SEARCH BASED SOFTWARE TESTING.** Software testing is an expensive activity essential in the development of software. For these reasons, over time, many researches have been made in order to further automate this stage. Software testing techniques based on research use meta-heuristic optimization techniques, such as genetic algorithms, in order to address problems involving the steps of the software testing, and verification and validation of the domain.
- **MINING SOFTWARE REPOSITORY.** Software repositories such as source code control systems, communications stored between project staff and monitoring systems of the defects are used to improve the management of the progress of software projects. The purpose of this branch of research is to find out how to obtain information in order to help understand the development and evolution software processes, support forecasts on software development, and plan future developments.
- **EMPIRICAL SOFTWARE ENGINEERING.** Empirical software engineering is a subdomain of software related to experiments on systems software (software products, processes and resources). This branch includes the design of experiments on software, the collection of the results, and the consequent development of laws and theories.

TEACHING

TEACHING ASSISTANCE

2016/17
2015/16
SOFTWARE ENGINEERING, MANAGEMENT AND EVOLUTION
Master's Degree in Computer Science, University of Salerno, Italy

2015/16
SOFTWARE ENGINEERING: MAINTENANCE AND TESTING
Master's Degree in Computer Science, University of Salerno, Italy

2016/17
2015/16
PROGRAMMING I
Bachelor's Degree in Computer Science, University of Salerno, Italy

2016/17
2015/16
SOFTWARE ENGINEERING
Bachelor's Degree in Computer Science, University of Salerno, Italy

2016/17
WEB DEVELOPMENT
Bachelor's Degree in Computer Science, University of Salerno, Italy

THESES COORDINATION SUPPORT

2017
DESIGN AND IMPLEMENTION OF A DEFECT PREDICTION TOOL BY USING CROSS-PROJECT TECHNIQUES
Student: Pasquale Martiniello – B.Sc. in Computer Science – Advisor: Prof. Andrea De Lucia

2016
TRIO: A TOOL FOR REGRESSION TESTING OPTIMIZATION
Student: Antonio Luca D'Avanzo – B.Sc. in Computer Science – Advisor: Prof. Andrea De Lucia

CHECKAPP: A TOOL FOR MONITORING JAVA APPLICATION PERFORMANCE
Student: Elisa D'Eugenio – M.Sc. in Computer Science – Advisor: Prof. Andrea De Lucia

DESIGN AND IMPLEMENTATION OF A DEFECT PREDICTION TOOL
Student: Fabiano Pecorelli – B.Sc. in Computer Science – Advisor: Prof. Andrea De Lucia

PETRA: A POWER ESTIMATION TOOL FOR ANDROID APPLICATIONS
Student: Antonio Prota – M.Sc. in Computer Science – Advisor: Prof. Andrea De Lucia

2015
IMPLEMENTATION AND COMPARISON OF NOVEL TECHNIQUES FOR SEARCH BASED TEST DATA GENERATION
Student: Giovanni Grano – M.Sc. in Computer Science – Advisor: Prof. Andrea De Lucia

A COMBINED MODEL FOR PREDICTION OF DEFECTS
Student: Simone Scalabrino – M.Sc. in Computer Science – Advisor: Prof. Andrea De Lucia

DESIGN AND IMPLEMENTATION OF A TOOL FOR THE AUTOMATIC GENERATION OF TEST CASES
Student: Giuseppe De Rosa – M.Sc. in Computer Science – Advisor: Prof. Andrea De Lucia

Professional Activities

Organization Committee Participation

2017 **Scientific Secretariat**
13th International Summer School on Software Engineering, University of Salerno, Italy

2016 **Scientific Secretariat**
12th International Summer School on Software Engineering, University of Salerno, Italy

2014 **Volunteer**
GUADEC – The Gnome Conference, Strasbourg, France

Program Committee Member

2017 International Conference on Advances in System Testing and Validation Lifecycle

Reviewer

International Journals
Advances in Software Engineering, Elsevier
Arabian Journal for Science and Engineering, Springer
Journal of Software: Evolution and Process, Wiley
Journal of King Saud University - Computer and Information Sciences, Elsevier

International Conferences
IEEE International Conference on Software Analysis, Evolution, and Reengineering: 2017
IEEE International Conference on Program Comprehension: 2016
IEEE International Conference on Software Maintenance and Evolution: 2016 (ERA Track)
International Conference on Business Information Systems: 2015, 2016
International Conference on Distributed Multimedia Systems: 2015, 2016
International Conference on Enterprise Information Systems: 2015, 2016, 2017

Invited Talks

2017 **Diagnose and Detect Energy Flaws of Android Apps**
Vrije Universiteit Brussel, Bruxelles, Belgium. March 23rd 2017

Participations at Conferences

2017	**Codemotion** Amsterdam, The Netherlands
	24th IEEE International Conference on Software Analysis, Evolution, and Reengineering (SANER) Klagenfurt, Austria
2016	**Symposium on Search-Based Software Engineering (SSBSE)** Raleigh, NC, United States
2015	**Symposium on Search-Based Software Engineering (SSBSE)** Bergamo, Italy
	37th ACM/IEEE International Conference on Software Engineering (ICSE) Florence, Italy
	12th IEEE/ACM Working Conference on Mining Software Repositories (MSR) Florence, Italy
2014	**The Gnome Conference (Guadec)** Strasbourg, France

Awards and Recognitions

2017	**NSF Travel Support** Symposium on Search-Based Software Engineering (SSBSE), Raleigh, NC, United States
2015	**ACM SIGSOFT Student Travel Grant** 37th ACM/IEEE International Conference on Software Engineering (ICSE), Florence, Italy

PUBLICATIONS

INTERNATIONAL CONFERENCES

D. Di Nucci, F. Palomba, A. Prota, A. Panichella, A. Zaidman, A. De Lucia.
PETrA: a Software-Based Tool for Estimating the Energy Profile of Android Applications
In Proceedings of the 39th International Conference on Software Engineering (ICSE 2017) – Demonstrations Track, Buenos Aires, Argentina, 2017, 4 pages, 3-6.

F. Palomba, D. Di Nucci, A. Panichella, A. Zaidman, A. De Lucia.
Lightweight Detection of Android-specific Code Smells: the aDoctor Project.
In Proceedings of the 24th IEEE International Conference on Software Analysis, Evolution, and Reengineering (SANER 2017) - Tool Track, Klagenfurt, Austria, 2017, 5 pages, 487-491

D. Di Nucci, F. Palomba, A. Prota, A. Panichella, A. Zaidman, A. De Lucia.
Software-Based Energy Profiling of Android Apps: Simple, Efficient and Reliable?
In Proceedings of the 24th IEEE International Conference on Software Analysis, Evolution, and Reengineering (SANER 2017) - Klagenfurt, Austria, 2017, 12 pages, 103-114

S. Scalabrino, G. Grano, D. Di Nucci, R. Oliveto, A. De Lucia
Search-based Testing of Procedural Programs: Iterative Single-Target or Multi-Target Approach?
In Proceedings of the Symposium on Search-Based Software Engineering (SSBSE 2016) - Raleigh, NC, United States, 2016, 15 pages, 64 - 79

F. Palomba, D. Di Nucci, A. Panichella, R. Oliveto, A. De Lucia
On the Diffusion of Test Smells in Automatically Generated Test Code: An Empirical Study.
In Proceedings of the 9th International Workshop on Search-Based Software Testing (SBST 2016) - Austin, TX, United States, 2016, 10 pages, 5-14

D. Di Nucci, F. Palomba, S. Siravo, G. Bavota, R. Oliveto, A. De Lucia
On the Role of Developer's Scattered Changes in Bug Prediction.
In Proceedings of the 31st International Conference on Software Maintenance and Evolution (ICSME 2015) - Bremen, Germany, 2015, 10 pages, 241-250

F. Palomba, D. Di Nucci, M. Tufano, G. Bavota, R. Oliveto, D. Poshyvanyk, A. De Lucia
Landfill: an Open Dataset of Code Smells with Public Evaluation.
In Proceedings of the IEEE/ACM 12th Working Conference on Mining Software Repositories (MSR 2015) - Florence, Italy, 2015, 4 pages, 482-485

D. Di Nucci, A. Panichella, A. Zaidman, A. De Lucia
Hypervolume-based Search for Test Case Prioritization.
In Proceedings of the Symposium on Search-Based Software Engineering (SSBSE 2015) - Bergamo, Italy, 2015, 15 pages, 157-172

INTERNATIONAL JOURNALS

D. Di Nucci, F. Palomba, R. Oliveto, A. De Lucia.
Dynamic Selection of Classifiers in Bug Prediction: an Adaptive Method.
IEEE Transactions on Emerging Topics in Computational Intelligence (TETCI), 2017, Volume 1 Issue 3, 11 pages, 202-212.

D. Di Nucci, F. Palomba, G. De Rosa, G. Bavota, R. Oliveto, A. De Lucia.
A Developer Centered Bug Prediction Model.
Transactions on Software Engineering (TSE), to appear.

Isernia, 26th June 2017