

# Dario Di Nucci

## Curriculum Vitae – Including Summary of Publications

Dario Di Nucci, Male, Italian <b>DATE OF BIRTH:</b> September 3rd, 1988 <b>PLACE OF BIRTH:</b> Isernia, Italy <b>Languages:</b> Italian (native), English (C1)	<b>ADDRESS:</b> Via Raffaele Iorio, 27 – 86170 Isernia - IT <b>E-MAIL:</b> <a href="mailto:ddinucci@unisa.it">ddinucci@unisa.it</a> <b>WEBSITE:</b> <a href="http://dardin88.github.io">http://dardin88.github.io</a>
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Dario Di Nucci is an assistant professor at the Software Engineering (SeSa) Lab of the University of Salerno. He received a European Ph.D. degree in Management & Information Technology from the University of Salerno in 2018, advised by Prof. Andrea De Lucia.

His research is on empirical software engineering, particularly software maintenance and evolution and software testing, where he applies machine learning, search-based algorithms, and mining of software repositories.

He is a member at large of the IEEE Conference Activities Committee. He serves as editor for Elsevier Journal of Systems and Software and Elsevier Science of Computer Programming, program committee member for international conferences, and referee for international journals in software engineering and artificial intelligence, for which he received several Distinguished/Outstanding Reviewer Awards.

He is an IEEE Software initiative team member and the social media manager of Elsevier Science of Computer Programming. He is a member of the OASIS TOSCA technical committee and co-leads the OASIS TOSCA "Emerging Compute Platforms ad-hoc".

## LICENSES AND CERTIFICATIONS

2022	<b>BASIC KWALIFICATIE ONDERWIJS (BKO) – UNIVERSITY TEACHING QUALIFICATION (UTQ)</b> Issued by Tilburg University
2020	<b>ABILITAZIONE SCIENTIFICA NAZIONALE - SETTORE CONCORSUALE 01/B1 - INFORMATICA - FASCIA II</b> Issued by Italian Ministry of University and Research. Valid from 23/11/2020 to 23/11/2029 <a href="https://asn18.cineca.it/pubblico/miur/esito-abilitato/01%252FB1/2/5">https://asn18.cineca.it/pubblico/miur/esito-abilitato/01%252FB1/2/5</a>  <b>ABILITAZIONE SCIENTIFICA NAZIONALE - SETTORE CONCORSUALE 09/H1 - SISTEMI DI ELABORAZIONE DELLE INFORMAZIONI - FASCIA II</b> Issued by Italian Ministry of University and Research. Valid from 13/11/2020 to 13/11/2029 <a href="https://asn18.cineca.it/pubblico/miur/esito-abilitato/09%252FH1/2/5">https://asn18.cineca.it/pubblico/miur/esito-abilitato/09%252FH1/2/5</a>
2014	<b>ABILITAZIONE ALLA PROFESSIONE DI INGEGNERE</b> Issued by University of Molise in December 2014

## EMPLOYMENT HISTORY

01/2022 - CURRENT	<b>ASSISTANT PROFESSOR (I.E., RICERCATORE A TEMPO DETERMINATO DI TIPO B)</b> University of Salerno, Italy <ul style="list-style-type: none"><li>- Lecturer for Software Dependability (MSc in Computer Science)</li><li>- Lecturer for Software Engineering, Management, and Evolution (MSc in Computer Science)</li></ul>
01/2020 – 12/2021	<b>ASSISTANT PROFESSOR</b> Jheronimus Academy of Data Science, Tilburg University, The Netherlands <ul style="list-style-type: none"><li>- Work Package Leader of the EU Horizon 2020 project "RADON: Rational decomposition and orchestration for serverless computing" (<a href="https://radon-h2020.eu/">https://radon-h2020.eu/</a>)</li><li>- MSc Thesis Coordinator</li><li>- Course Coordinator for Introduction to Machine Learning (Pre-MSc in Data Science and Entrepreneurship)</li></ul>

- Lecturer for Data Engineering (MSc in Data Science and Entrepreneurship)
- Lecturer for Statistics (BSc in Data Science)

**01/2018 – 12/2019**

**POST-DOCTORAL RESEARCHER**

Vrije Universiteit Brussel, Belgium

- Researcher in the FWO EOS project "SECO-ASSIST: Automated Assistance for Developing Software in Ecosystems of the Future" (<https://secoassist.github.io/>)
- Researcher in the Innoviris TeampUP project "INTIMALS INTeLLigent Modernisation Assistance for Legacy Software" (<http://soft.vub.ac.be/intimals/>)
- Lecturer for "Capita Selecta of Software Engineering" (MSc in Computer Science)

**12/2014 – 03/2018**

**PH.D. STUDENT IN MANAGEMENT & INFORMATION TECHNOLOGY**

University of Salerno, Italy

Fully funded by University of Salerno. Advisor: Prof. Andrea De Lucia

## EDUCATION

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**12/2014 – 03/2018**

**DOCTOR OF PHILOSOPHY (PH.D.) IN MANAGEMENT & INFORMATION TECHNOLOGY**

University of Salerno, Italy

Fully funded by University of Salerno

Dissertation: "Methods and Tools for Focusing and Prioritizing the Testing Effort"

Promotor: Prof. Andrea De Lucia

**06/2017**

**13<sup>TH</sup> INTERNATIONAL SUMMER SCHOOL ON SOFTWARE ENGINEERING (ISSSE)**

University of Salerno, Italy

**03/2017 – 05/2017**

**VISITING STUDENT**

**05/2016 – 07/2016**

Delft University of Technology, The Netherlands

Advisor: Prof. Andy Zaidman

**06/2016**

**12<sup>TH</sup> INTERNATIONAL SUMMER SCHOOL ON SOFTWARE ENGINEERING (ISSSE)**

University of Salerno, Italy

**09/2015**

**INTERNATIONAL SUMMER SCHOOL ON SOFTWARE ENGINEERING (SE SCHOOL@UNIBZ 2015)**

Free University of Bolzano, Italy

**03/2013**

**ERASMUS IP HUMAN-MACHINE INTERACTION**

Reims, France

**10/2011 – 09/2014**

**MASTER'S DEGREE (M.Sc.) IN COMPUTER SCIENCE**

University of Salerno, Italy

110/110 cum laude

Dissertation: "A defect prediction model based on relationships between developers and modified files"

Promotor: Prof. Andrea De Lucia

**10/2007 – 05/2011**

**BACHELOR'S DEGREE (B.Sc.) IN COMPUTER SCIENCE**

University of Molise, Italy

110/110 cum laude

Dissertation: "Applications of mathematical models to semantic research"

Promotor: Prof. Giovanni Capobianco

## TEACHING

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**SOFTWARE ENGINEERING, MANAGEMENT, AND EVOLUTION** (mandatory course of the Master's in Computer Science)

University of Salerno, Italy

Lecturer (course coordinator: Prof. Andrea De Lucia) - Spring 2022

**SOFTWARE DEPENDABILITY** (mandatory course of the Master's in Computer Science)

University of Salerno, Italy

Lecturer (course coordinator: Dr. Fabio Palomba) - Spring 2022

**INTRODUCTION TO MACHINE LEARNING** (mandatory course of the Pre-Master's in Data Science and Entrepreneurship)

Jheronimus Academy of Data Science, (Tilburg University, Eindhoven University of Technology), The Netherlands

Course coordinator - Spring 2021

Lecturer (course coordinator: Prof. Damian A. Tamburri) - Spring 2020

**DATA ENGINEERING** (mandatory course of the Master's in Data Science and Entrepreneurship)

Jheronimus Academy of Data Science, (Tilburg University, Eindhoven University of Technology), The Netherlands

Lecturer (course coordinator: Prof. Damian A. Tamburri) - Fall 2021, Fall 2020

**DATA STATISTICS** (mandatory course of the Bachelor's in Data Science)

Tilburg University, Eindhoven University of Technology, The Netherlands

Lecturer (course coordinator: Prof. Maurits C. Kaptein) - Fall 2019

**CAPITA SELECTA OF SOFTWARE ENGINEERING** (elective course of the Master's in Computer Science)

Vrije Universiteit Brussel, Belgium

Lecturer (course coordinator: Prof. Coen De Roover) - 2019-2020, 2018-2019 - annual course

**SOFTWARE ENGINEERING, MANAGEMENT AND EVOLUTION** (mandatory course of the Master's in Computer Science)

University of Salerno, Italy

Teaching assistant (course coordinator: Prof. Andrea De Lucia) - Spring 2017, Spring 2016

**SOFTWARE ENGINEERING** (mandatory course of the Bachelor's in Computer Science)

University of Salerno, Italy

Teaching assistant (course coordinator: Prof. Andrea De Lucia) - Fall 2016, Fall 2015

**WEB DEVELOPMENT** (mandatory course in the Bachelor's in Computer Science)

University of Salerno, Italy

Teaching assistant - Fall 2016

**PROGRAMMING I** (mandatory course in the Bachelor's in Computer Science)

University of Salerno, Italy

Teaching assistant - Fall 2016 (course coordinator: Prof. Riccardo Di Stasi), Fall 2015 (course coordinator: Prof. Enrico Fischetti)

**SOFTWARE ENGINEERING: MAINTENANCE AND TESTING** (mandatory course of the Master's in Computer Science)

University of Salerno, Italy

Teaching assistant (course coordinator: Prof. Andrea De Lucia) - Fall 2015

# SUPERVISION

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## SUPERVISION OF PH.D. THESES

- 2020**                    **[PT1] AN AUTOMATED DELTA-DEBUGGING APPROACH TO RESILIENCE TESTING OF ACTOR SYSTEMS THROUGH FAULT INJECTION**  
Jonas De Bleser – Ph.D. in Computer Science – Promotor: Prof. Coen De Roover

## SUPERVISION OF MASTER'S THESES

- 2022**                    **[MT16] DETECTING ROAD SURFACE ANOMALIES USING MULTIMODAL MACHINE LEARNING**  
Joël Luijmes – M.Sc. in Data Science and Entrepreneurship – Promotor: Dr. Willem-Jan van den Heuvel
- [MT15] ON THE USE OF AUTOMATIC CLASSIFICATION FOR BUG TRIAGING IN INDUSTRY**  
Christos Kitsanelis – M.Sc. in Computer Science and Engineering – Promotor: Dr. Eleni Constantinou
- [MT14] DUTCH TEXT GENERATION TO COMBAT CLASS IMBALANCE**  
Ellen Mans – M.Sc. in Data Science and Entrepreneurship – Promotor: Dr. Dario Di Nucci
- 2021**                    **[MT13] ENRICHING A POINTS-OF-INTEREST DATASET BY APPLYING LOCATION EXTRACTION AND WEBSITE CLASSIFICATION ON SCRAPED BUSINESS WEBSITES**  
Paulo Rijnberg – M.Sc. in Data Science and Entrepreneurship – Promotor: Dr. Daan Kolkman
- [MT12] TOWARD FURTHER AUTOMATION OF WEAK SUPERVISION - A TEXT CLASSIFICATION CASE STUDY**  
Christos Papasimos – M.Sc. in Data Science and Entrepreneurship – Promotor: Dr. Damian A. Tamburri
- [MT11] VARIATIONAL TASK ENCODERS FOR MODEL-AGNOSTIC META-LEARNING WITH UNCERTAINTY OVER TASK DISTRIBUTIONS**  
Luuk Schagen – M.Sc. in Data Science and Entrepreneurship – Promotor: Dr. Joaquin Vanschoren
- [MT10] PREDICTING REVENUE OF COMMERCIAL CLIENTS OF A DUTCH FINANCIAL INSTITUTION USING MACHINE LEARNING**  
Jens van de Zande – M.Sc. in Data Science and Entrepreneurship – Promotor: Dr. Dario Di Nucci
- [MT9] PREDICTING SECURITY-RELEVANT COMMITS WITH STATIC CODE ANALYZERS**  
Therese Fehrer – M.Sc. in Data Science and Entrepreneurship – Promotor: Dr. Damian A. Tamburri
- 2020**                    **[MT8] SOURCE CODE MEASUREMENTS FOR MACHINE LEARNING-BASED SMELL DETECTION IN INFRASTRUCTURE AS CODE: A TOSCA CASE-STUDY**  
Chiel van Asseldonk – M.Sc. in Data Science and Entrepreneurship – Promotor: Prof. Damian A. Tamburri
- [MT7] MEASURING COMPETITIVENESS BASED ON INSTAGRAM FOLLOWER COMMUNICATION**  
Niels van Gorsel – M.Sc. in Data Science and Entrepreneurship – Promotor: Prof. Shantanu Mullick
- [MT6] HEURISTIC-GUIDED RESILIENCE TESTING OF PERSISTENT ACTOR IMPLEMENTATIONS**  
Patrick Muriuki Gakuo – M.Sc. in Computer Science – Promotor: Prof. Coen De Roover
- 2016**                    **[MT5] CHECKAPP: A TOOL FOR MONITORING JAVA APPLICATION PERFORMANCE**  
Elisa D'Eugenio – M.Sc. in Computer Science – Promotor: Prof. Andrea De Lucia
- [MT4] PETRA: A POWER ESTIMATION TOOL FOR ANDROID APPLICATIONS**  
Antonio Prota – M.Sc. in Computer Science – Promotor: Prof. Andrea De Lucia
- 2015**                    **[MT3] DEVELOPMENT AND COMPARISON OF NOVEL TECHNIQUES FOR SEARCH BASED TEST DATA GENERATION**  
Giovanni Grano – M.Sc. in Computer Science – Promotor: Prof. Andrea De Lucia

**[MT2] DESIGN AND DEVELOPMENT OF A TOOL FOR THE AUTOMATIC GENERATION OF TEST CASES**  
Simone Scalabrino – M.Sc. in Computer Science – Promotor: Prof. Andrea De Lucia

**[MT1] A COMBINED MODEL FOR THE PREDICTION OF DEFECTS**  
Giuseppe De Rosa – M.Sc. in Computer Science – Promotor: Prof. Andrea De Lucia

## **SUPERVISION OF BACHELOR'S THESES**

**2017**

**[BT9] DESIGN AND DEVELOPMENT OF METHODS FOR TEST CASE MINIMIZATION**  
Francesco De Feo – B.Sc. in Computer Science – Promotor: Prof. Andrea De Lucia

**[BT8] DESIGN AND DEVELOPMENT OF METHODS FOR TEST CASE PRIORITIZATION**  
Giuseppe Sessa – B.Sc. in Computer Science – Promotor: Prof. Andrea De Lucia

**[BT7] DESIGN AND DEVELOPMENT OF A PLUGIN FOR OPTIMIZING REGRESSION TESTING**  
Gerardo Della Monica – B.Sc. in Computer Science – Promotor: Prof. Andrea De Lucia

**[BT6] DESIGN AND DEVELOPMENT OF A PLUGIN FOR THE DETECTION OF ENERGY DEFECTS OF MOBILE APPLICATIONS**  
Sara Zaino – B.Sc. in Computer Science – Promotor: Prof. Andrea De Lucia

**[BT5] DESIGN AND DEVELOPMENT OF A DEFECT PREDICTION TOOL**  
Giuseppina Tufano – B.Sc. in Computer Science – Promotor: Prof. Andrea De Lucia

**[BT4] DEVELOPMENT OF A SOFTWARE ENERGY ESTIMATION METHODOLOGY IN AN INTEGRATED DEVELOPMENT ENVIRONMENT**  
Roberto Contaldo – B.Sc. in Computer Science – Promotor: Prof. Andrea De Lucia

**[BT3] DESIGN AND DEVELOPMENT OF A DEFECT PREDICTION TOOL BY USING CROSS-PROJECT TECHNIQUES**  
Pasquale Martiniello – B.Sc. in Computer Science – Advisor: Prof. Andrea De Lucia

**2016**

**[BT2] TRIO: A TOOL FOR REGRESSION TESTING OPTIMIZATION**  
Antonio Luca D'Avanzo – B.Sc. in Computer Science – Promotor: Prof. Andrea De Lucia

**[BT1] DESIGN AND DEVELOPMENT OF A DEFECT PREDICTION TOOL**  
Fabiano Pecorelli – B.Sc. in Computer Science – Promotor: Prof. Andrea De Lucia

## ACADEMIC RECORD

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Journal Articles: 13

Conference Papers: 12 (main track), 7 (tool demonstration track), 6 (miscellaneous tracks)

Workshop Papers: 9

Citations: 1201 on Google Scholar, h-index: 19, <https://scholar.google.it/citations?user=YJqcbnIAAAAJ>

772 on Scopus, h-index: 15, <https://www.scopus.com/authid/detail.uri?authorId=57016777600>

### JOURNAL PAPERS

**[J13] THE DO'S AND DON'TS OF INFRASTRUCTURE CODE: A SYSTEMATIC GREY LITERATURE REVIEW**

I. Kumara, M. Garriga, A. U. Romeu, F. Palomba, D. Di Nucci, D. A. Tamburri, W. J. van den Heuvel  
Elsevier Information and Software Technology (INFOSoft), 2021, Volume 137, 20 pages.

**[J12] ADAPTIVE SELECTION OF CLASSIFIERS FOR BUG PREDICTION: A LARGE-SCALE EMPIRICAL ANALYSIS OF ITS PERFORMANCES AND A BENCHMARK STUDY**

F. Pecorelli, D. Di Nucci  
Elsevier Science of Computer Programming (SCICO), 2021, Volume 295, 18 pages

**[J11] WITHIN-PROJECT DEFECT PREDICTION OF INFRASTRUCTURE-AS-CODE USING PRODUCT AND PROCESS METRICS**

S. Dalla Palma, D. Di Nucci, F. Palomba, D. A. Tamburri  
IEEE Transactions on Software Engineering (TSE), 2021, 18 pages, In press

**[J10] PRIORITISING SERVER SIDE REACHABILITY VIA INTER-PROCESS CONCOLIC TESTING**

M. Vandercammen, L. Christophe, D. Di Nucci, W. De Meuter, C. De Roover  
The Art, Science, and Engineering of Programming, 2021, Volume 5, Issue 2, Article 5, 34 pages

**[J9] ANSIBLEMETRICS: A PYTHON LIBRARY FOR MEASURING INFRASTRUCTURE-AS-CODE BLUEPRINTS IN ANSIBLE**

S. Dalla Palma, D. Di Nucci, D. A. Tamburri  
SoftwareX, 2020, Volume 12, 6 pages

**[J8] TOWARD A CATALOG OF SOFTWARE QUALITY METRICS FOR INFRASTRUCTURE CODE**

S. Dalla Palma, D. Di Nucci, F. Palomba, D. A. Tamburri  
Elsevier Journal of Systems and Software (JSS), 2020, Volume 170, 8 pages, 1-8

**[J7] A LARGE EMPIRICAL ASSESSMENT OF THE ROLE OF DATA BALANCING IN MACHINE-LEARNING-BASED CODE SMELL DETECTION**

F. Pecorelli, D. Di Nucci, C. De Roover, A. De Lucia  
Elsevier Journal of Systems and Software (JSS), 2020, Volume 169, 16 pages, 1-16

**[J6] SCENTED SINCE THE BEGINNING: ON THE DIFFUSENESS OF TEST SMELLS IN AUTOMATICALLY GENERATED TEST CODE**

G. Grano, F. Palomba, D. Di Nucci, A. De Lucia, H. Gall  
Elsevier Journal of Systems and Software (JSS), 2019, Volume 156, 16 pages, 312-327

**[J5] THIRD-PARTY LIBRARIES IN MOBILE APPS WHEN, HOW, AND WHY DEVELOPERS UPDATE THEM**

P. Salza, F. Palomba, D. Di Nucci, A. De Lucia, F. Ferrucci  
Springer Empirical Software Engineering (EMSE), 2019, Volume 25, 37 pages, 2341-2377

**[J4] A TEST CASE PRIORITIZATION GENETIC ALGORITHM GUIDED BY THE HYPERVOLUME INDICATOR**

D. Di Nucci, A. Panichella, A. Zaidman, A. De Lucia  
IEEE Transactions on Software Engineering (TSE), 2019, Volume 46, Issue 6, 674-696

**[J3] ON THE IMPACT OF CODE SMELLS ON THE ENERGY CONSUMPTION OF MOBILE APPLICATIONS**

F. Palomba, D. Di Nucci, A. Panichella, A. Zaidman, A. De Lucia  
Elsevier Information and Software Technology (INFOSoft), 2019, Volume 105, 13 pages, 43-55

**[J2] A DEVELOPER CENTERED BUG PREDICTION MODEL**

D. Di Nucci, F. Palomba, G. De Rosa, G. Bavota, R. Oliveto, A. De Lucia  
IEEE Transactions on Software Engineering (TSE), 2018, Volume 44 Issue 1, 21 pages, 5-24

**[J1] DYNAMIC SELECTION OF CLASSIFIERS IN BUG PREDICTION: AN ADAPTIVE METHOD**

D. Di Nucci, F. Palomba, R. Oliveto, A. De Lucia

IEEE Transactions on Emerging Topics in Computational Intelligence (TETCI), 2017, Volume 1, Issue 3, 11 pages, 202-212

**CONFERENCE PAPERS, MAIN TRACK**

**[C12] A DELTA-DEBUGGING APPROACH TO ASSESSING THE RESILIENCE OF ACTOR PROGRAMS THROUGH RUN-TIME TEST PERTURBATIONS**

J. De Bleser, D. Di Nucci, C. De Roover

1<sup>st</sup> IEEE/ACM International Conference on Automation of Software Test (AST 2020)

Virtual (originally Seoul, South Korea), 2020, 10 pages, 21-30

**[C11] COMPARING HEURISTIC AND MACHINE LEARNING APPROACHES FOR METRIC-BASED CODE SMELL DETECTION**

F. Pecorelli, F. Palomba, D. Di Nucci, A. De Lucia

27<sup>th</sup> IEEE/ACM International Conference on Program Comprehension (ICPC 2019)

Montreal, Canada, 2019, 12 pages, 93-104

**[C10] CROSS-PROJECT JUST-IN-TIME BUG PREDICTION FOR MOBILE APPS: AN EMPIRICAL ASSESSMENT**

G. Catolino, D. Di Nucci, F. Ferrucci

6<sup>th</sup> IEEE/ACM International Conference on Mobile Software Engineering and Systems (MOBILESoft 2019)

Montreal, Canada, 2019, 12 pages, 99-110

**[C9] ASSESSING DIFFUSION AND PERCEPTION OF TEST SMELLS IN SCALA PROJECTS**

J. De Bleser, D. Di Nucci, C. De Roover

16<sup>th</sup> IEEE/ACM International Conference on Mining Software Repositories (MSR 2019)

Montreal, Canada, 2019, 11 pages, 457-467

**[C8] MINING SCALA FRAMEWORK EXTENSIONS FOR RECOMMENDATION PATTERNS**

Y. Pacheco, J. De Bleser, T. Molderez, D. Di Nucci, W. De Meuter, C. De Roover

26<sup>th</sup> IEEE International Conference on Software Analysis, Evolution, and Reengineering (SANER 2018)

Hangzhou, China, 2019, 10 pages, 514-523

**[C7] DO DEVELOPERS UPDATE THIRD-PARTY LIBRARIES IN MOBILE APPS?**

P. Salza, F. Palomba, D. Di Nucci, C. D'Uva, A. De Lucia, F. Ferrucci

IEEE/ACM 26<sup>th</sup> International Conference on Program Comprehension (ICPC 2018)

Gothenburg, Sweden, 2018, 11 pages, 255-265

**[C6] SELF-REPORTED ACTIVITIES OF ANDROID DEVELOPERS**

L. Pascarella, F. Geiger, F. Palomba, D. Di Nucci, I. Malavolta, A. Bacchelli

5<sup>th</sup> IEEE/ACM International Conference on Mobile Software Engineering and Systems (MOBILESoft 2018)

Gothenburg, Sweden, 2018, 12 pages, 144-155

**[C5] DETECTING CODE SMELLS USING MACHINE LEARNING TECHNIQUES: ARE WE THERE YET?**

D. Di Nucci, F. Palomba, D. A. Tamburri, A. Serebrenik, A. De Lucia

25<sup>th</sup> IEEE International Conference on Software Analysis, Evolution, and Reengineering (SANER 2018)

Campobasso, Italy, 2018, 10 pages, 612-621

**[C4] SOFTWARE-BASED ENERGY PROFILING OF ANDROID APPS: SIMPLE, EFFICIENT AND RELIABLE?**

D. Di Nucci, F. Palomba, A. Prota, A. Panichella, A. Zaidman, A. De Lucia

24<sup>th</sup> IEEE International Conference on Software Analysis, Evolution, and Reengineering (SANER 2017)

Klagenfurt, Austria, 2017, 12 pages, 103-114

**[C3] SEARCH-BASED TESTING OF PROCEDURAL PROGRAMS: ITERATIVE SINGLE-TARGET OR MULTI-TARGET APPROACH?**

S. Scalabrino, G. Grano, D. Di Nucci, R. Oliveto, A. De Lucia

Symposium on Search-Based Software Engineering (SSBSE 2016)

Raleigh, NC, United States, 2016, 15 pages, 64-79

**[C2] ON THE ROLE OF DEVELOPER'S SCATTERED CHANGES IN BUG PREDICTION**

D. Di Nucci, F. Palomba, S. Siravo, G. Bavota, R. Oliveto, A. De Lucia

31<sup>st</sup> IEEE International Conference on Software Maintenance and Evolution (ICSME 2015)

Bremen, Germany, 2015, 10 pages, 241-250

**[C1] HYPERVOLUME-BASED SEARCH FOR TEST CASE PRIORITIZATION**  
D. Di Nucci, A. Panichella, A. Zaidman, A. De Lucia  
Symposium on Search-Based Software Engineering (SSBSE 2015)  
Bergamo, Italy, 2015, 15 pages, 157-172

## CONFERENCE PAPERS, TOOL DEMONSTRATIONS TRACK

**[D7] REFACTORING ANDROID-SPECIFIC ENERGY SMELLS: A PLUGIN FOR ANDROID STUDIO**  
E. Iannone, F. Pecorelli, D. Di Nucci, F. Palomba, A. De Lucia  
IEEE/ACM 28<sup>th</sup> International Conference on Program Comprehension (ICPC 2020)  
Virtual (originally Seoul, South Korea), 2020, 5 pages, 451-455

**[D6] SOCRATES - SCALA RADAR FOR TEST SMELLS**  
J. De Bleser, D. Di Nucci, C. De Roover  
10<sup>th</sup> ACM SIGPLAN Scala Symposium (SCALA 2019)  
London, United Kingdom, 2019, 5 pages, 22-26

**[D5] OCELOT: A SEARCH-BASED TEST-DATA GENERATION TOOL FOR C**  
S. Scalabrino, G. Grano, D. Di Nucci, M. Guerra, A. De Lucia, H. Gall, R. Oliveto  
33<sup>rd</sup> IEEE/ACM International Conference on Automated Software Engineering (ASE 2018)  
Montpellier, France, 2018, 4 pages, 868-871

**[D4] A GRAPH-BASED DATASET OF COMMIT HISTORY OF REAL-WORLD ANDROID APPS**  
F. Geiger, I. Malavolta, L. Pascarella, F. Palomba, D. Di Nucci, A. Bacchelli  
IEEE/ACM 15<sup>th</sup> International Conference on Mining Software Repositories (MSR 2018)  
Gothenburg, Sweden, 2018, 5 pages, 30-33

**[D3] PETRA: A SOFTWARE-BASED TOOL FOR ESTIMATING THE ENERGY PROFILE OF ANDROID APPLICATIONS**  
D. Di Nucci, F. Palomba, A. Prota, A. Panichella, A. Zaidman, A. De Lucia  
39<sup>th</sup> IEEE/ACM International Conference on Software Engineering (ICSE 2017)  
Buenos Aires, Argentina, 2017, 4 pages, 3-6

**[D2] LIGHTWEIGHT DETECTION OF ANDROID-SPECIFIC CODE SMELLS: THE ADOCTOR PROJECT**  
F. Palomba, D. Di Nucci, A. Panichella, A. Zaidman, A. De Lucia  
24<sup>th</sup> IEEE International Conference on Software Analysis, Evolution, and Reengineering (SANER 2017)  
Klagenfurt, Austria, 2017, 5 pages, 487-491

**[D1] LANDFILL: AN OPEN DATASET OF CODE SMELLS WITH PUBLIC EVALUATION**  
F. Palomba, D. Di Nucci, M. Tufano, G. Bavota, R. Oliveto, D. Poshyvanyk, A. De Lucia  
IEEE/ACM 12<sup>th</sup> Working Conference on Mining Software Repositories (MSR 2015)  
Florence, Italy, 2015, 4 pages, 482-485

## CONFERENCE PAPERS, MISCELLANEOUS TRACKS

**[M6] TOWARD AUTOMATED EXPLOIT GENERATION FOR KNOWN VULNERABILITIES IN OPEN-SOURCE LIBRARIES**  
E. Iannone, D. Di Nucci, A. Sabetta, A. De Lucia  
29<sup>th</sup> IEEE/ACM International Conference on Program Comprehension (ICPC 2021)  
Early Research Achievement Track, Virtual (originally Madrid, Spain), 2021, 5 pages, 396-400

**[M5] THE MAKING OF ACCESSIBLE ANDROID APPLICATIONS: AN EMPIRICAL STUDY ON THE STATE OF THE PRACTICE**  
M. Di Gregorio, D. Di Nucci, F. Palomba, G. Vitiello  
36<sup>th</sup> IEEE International Conference on Software Maintenance and Evolution (ICSME 2020)  
Registered Reports Track, Virtual (originally Melbourne, Australia), 2020, 5 pages, 857-861

**[M4] COUNTERTERRORISM FOR CYBER-PHYSICAL SPACES: A COMPUTER VISION APPROACH**  
G. Cascavilla, J. Slabber, F. Palomba, D. Di Nucci, D. A. Tamburri, W.J. van den Heuvel  
International Conference on Advanced Visual Interfaces (AVI 2020)  
Short Paper, Ischia, Italy, 2020, 5 pages, 1-5



**[M3] QUALITY MANAGEMENT OF INFRASTRUCTURE CODE IN SERVERLESS COMPUTING: THE RADON APPROACH**

S. Dalla Palma, M. Garriga, D. Di Nucci, D. A. Tamburri, W.J. van den Heuvel  
8<sup>th</sup> European Conference On Service-Oriented And Cloud Computing (ESOCC 2020)  
EU Projects Track, Virtual (originally Heraklion, Greece), 2020, 5 pages, to appear

**[M2] MINING PATTERNS IN SOURCE CODE USING TREE MINING ALGORITHMS**

H. Son Pham, S. Nijssen, K. Mens, D. Di Nucci, T. Molderez, C. De Roover, J. Fabry, V. Zaytsev.  
22<sup>nd</sup> International Conference on Discovery Science (DS 2019)  
Short Paper, Split, Croatia, 2019, 10 pages, 471-480

**[M1] METHODS AND TOOLS FOR FOCUSING AND PRIORITIZING THE TESTING EFFORT**

D. Di Nucci  
34<sup>th</sup> IEEE International Conference on Software Maintenance and Evolution (ICSME 2018)  
Doctoral Symposium Track, Madrid, Spain, 2018, 5 pages, 722-726

**PUBLISHED WORKSHOP PAPERS**

**[W9] DEEPIAC: DEEP LEARNING-BASED LINGUISTIC ANTI-PATTERN DETECTION FOR IAC**

N. Borovits, I. Kumara, P. Krishnan, S. Dalla Palma, D. Di Nucci, F. Palomba, D. A. Tamburri, W. J. van den Heuvel  
4<sup>th</sup> ACM SigSoft International Workshop on Machine Learning Techniques for Software Quality Evaluation (MaLTaSQuE 2020)  
Virtual (originally Sacramento, USA), 2020, 6 pages, 7-12

**[W8] SINGLING THE ODD ONES OUT: A NOVELTY DETECTION APPROACH TO FIND DEFECTS IN INFRASTRUCTURE-AS-CODE**

S. Dalla Palma, M. Mohammadi, D. Di Nucci, D. A. Tamburri  
4<sup>th</sup> ACM SigSoft International Workshop on Machine Learning Techniques for Software Quality Evaluation (MaLTaSQuE 2020)  
Virtual (originally Sacramento, USA), 2020, 6 pages, 31-36.

**[W7] ON THE ROLE OF DATA BALANCING FOR MACHINE LEARNING-BASED CODE SMELL DETECTION**

F. Pecorelli, D. Di Nucci, C. De Roover, A. De Lucia  
3<sup>rd</sup> ACM SigSoft International Workshop on Machine Learning Techniques for Software Quality Evaluation (MaLTaSQuE 2019)  
Tallinn, Estonia, 2019, 6 pages, 19-24

**[W6] A LANGUAGE-PARAMETRIC MODULAR FRAMEWORK FOR MINING IDIOMATIC CODE PATTERNS**

D. Di Nucci, H. Son Pham, J. Fabry, C. De Roover, K. Mens, T. Molderez, S. Nijssen and V. Zaytsev  
In Proceedings of the 12<sup>th</sup> Seminar Series on Advanced Techniques & Tools for Software Evolution (SATTOSSE 2019)  
Bolzano, Italy, 2019

**[W5] MINING EXTENSION POINT PATTERNS IN SCALA**

Y. Pacheco, J. De Bleser, T. Molderez, D. Di Nucci, W. De Meuter, C. De Roover  
17<sup>th</sup> Belgium-Netherlands Software Evolution Workshop (BENEVOL 2018)  
Delft, The Netherlands, 2018, 5 pages, 16-20

**[W4] OMNISCIENT DEVOPS ANALYTICS**

D. Tamburri, F. Palomba, D. Di Nucci, L. Di Giacomo  
1<sup>st</sup> International Workshop on Software Engineering Aspects of Continuous Development and New Paradigms of Software Production and Deployment (DEVOPS 2018)  
Chateau de Villebrumier, France, 2018, 12 pages, 48-59

**[W3] EVALUATING THE ADAPTIVE SELECTION OF CLASSIFIERS FOR CROSS-PROJECT BUG PREDICTION**

D. Di Nucci, F. Palomba, A. De Lucia  
6<sup>th</sup> International Workshop on Realizing Artificial Intelligence Synergies in Software Engineering (RAISE 2018)  
Gothenburg, Sweden, 2018, 7 pages, 48-54

**[W2] THE ROLE OF META-LEARNERS IN THE ADAPTIVE SELECTION OF CLASSIFIERS**

D. Di Nucci, A. De Lucia  
2<sup>nd</sup> Workshop on Machine Learning Techniques for Software Quality Evaluation (MaLTaSQuE 2018)  
Campobasso, Italy, 2018, 6 pages, 7-12

**[W1] ON THE DIFFUSION OF TEST SMELLS IN AUTOMATICALLY GENERATED TEST CODE: AN EMPIRICAL STUDY**

F. Palomba, D. Di Nucci, A. Panichella, R. Oliveto, A. De Lucia

9<sup>th</sup> International Workshop on Search-Based Software Testing (SBST 2016)

Austin, TX, United States, 2016, 10 pages, 5-14

## PROFESSIONAL SERVICES TO THE SCIENTIFIC COMMUNITY

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### EDITORIAL BOARD MEMBER OF INTERNATIONAL JOURNALS AND BLOG

<b>05/2021 - CURRENT</b>	Elsevier Science of Computer Programming (SCICO)
<b>03/2021 - CURRENT</b>	Elsevier Journal of Systems and Software (JSS)
<b>05/2020 - CURRENT</b>	IEEE Software Initiatives Team
<b>01/2019 - CURRENT</b>	IEEE Software Blog
<b>09/2020</b>	Guest Editor for Elsevier Science of Computer Programming (SCICO) for the Special Issue on "Software Health of Software Ecosystems"

### ORGANIZATION OF SCIENTIFIC EVENTS

<b>2021</b>	<b>Co-ORGANIZER</b> 20 <sup>th</sup> Belgium-Netherlands Software Evolution Workshop (BENEVOL) Virtual (originally 's-Hertogenbosch, The Netherlands)  <b>TOOL DEMO Co-CHAIR</b> 29 <sup>th</sup> IEEE/ACM International Conference on Program Comprehension (ICPC) Virtual (originally Madrid, Spain)
<b>2020</b>	<b>Co-ORGANIZER</b> 3 <sup>rd</sup> International Workshop on Software Health (SoHeal) Virtual (originally Seoul, South Korea)  <b>PUBLICITY Co-CHAIR</b> 28 <sup>th</sup> IEEE/ACM International Conference on Program Comprehension (ICPC) Virtual (originally Seoul, South Korea)
<b>2019</b>	<b>Co-ORGANIZER</b> 18 <sup>th</sup> Belgium-Netherlands Software Evolution Workshop (BENEVOL) Brussels, Belgium
<b>2017</b>	<b>SCIENTIFIC SECRETARIAT</b> 13 <sup>th</sup> International Summer School on Software Engineering (ISSSE) University of Salerno, Italy
<b>2016</b>	<b>SCIENTIFIC SECRETARIAT</b> 12 <sup>th</sup> International Summer School on Software Engineering (ISSSE) University of Salerno, Italy

### PROGRAM COMMITTEE MEMBER OF INTERNATIONAL CONFERENCES

<b>2023</b>	45 <sup>th</sup> IEEE/ACM International Conference on Software Engineering (ICSE) Software Engineering in Practice Track
<b>2022</b>	38 <sup>th</sup> IEEE International Conference on Software Maintenance and Evolution (ICSME) Tool Demo Track  22 <sup>nd</sup> IEEE International Working Conference on Source Code Analysis and Manipulation (SCAM) Research Track

	44 <sup>th</sup> IEEE/ACM International Conference on Software Engineering (ICSE) Student Research Competition Track
	30 <sup>th</sup> International Conference on Program Comprehension (ICPC) Research Track
	9 <sup>th</sup> IEEE/ACM International Conference on Mobile Software Engineering and Systems (MOBILESoft) Technical Papers Track
	19 <sup>th</sup> IEEE/ACM International Conference on Mining Software Repositories (MSR) Technical Papers Track, Registered Report Track
	9 <sup>th</sup> European Conference on Service-Oriented and Cloud Computing (ESOCC) Project Track
	29 <sup>th</sup> IEEE International Conference on Software Analysis, Evolution, and Reengineering (SANER) Research Track
<b>2021</b>	21 <sup>st</sup> IEEE International Working Conference on Source Code Analysis and Manipulation (SCAM) Research Track, Artifact Evaluation Track
	37 <sup>th</sup> IEEE International Conference on Software Maintenance and Evolution (ICSME) Tool Demo Track, Artifact Evaluation Track
	8 <sup>th</sup> IEEE/ACM International Conference on Mobile Software Engineering and Systems (MOBILESoft) Technical Papers Track
	28 <sup>th</sup> IEEE International Conference on Software Analysis, Evolution, and Reengineering (SANER) Research Track, Reproducibility Studies and Negative Results Track, Tool Demo Track
<b>2020</b>	20 <sup>th</sup> IEEE International Working Conference on Source Code Analysis and Manipulation (SCAM) New Ideas and Emerging Results Track
	28 <sup>th</sup> ACM Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering (ESEC/FSE) Tool Demo Track
	35 <sup>th</sup> IEEE/ACM International Conference on Automated Software Engineering (ASE) Late Breaking Results Track
	46 <sup>th</sup> Euromicro Conference on Software Engineering and Advanced Applications (SEAA) Journal First Track
	28 <sup>th</sup> International Conference on Program Comprehension (ICPC) Research Track
	27 <sup>th</sup> IEEE International Conference on Software Analysis, Evolution, and Reengineering (SANER) Research Track, Journal First Track, Tool Demo Track
<b>2019</b>	35 <sup>th</sup> IEEE International Conference on Software Maintenance and Evolution (ICSME) Tool Demo Track
	27 <sup>th</sup> ACM Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering (ESEC/FSE) Artefact Evaluation Track
	6 <sup>th</sup> IEEE/ACM International Conference on Mobile Software Engineering and Systems (MOBILESoft) Student Research Competition

- 2018**                      34<sup>th</sup> IEEE International Conference on Software Maintenance and Evolution (ICSME)  
Tool Demo Track
- 5<sup>th</sup> IEEE/ACM International Conference on Mobile Software Engineering and Systems (MOBILESoft)  
Student Research Competition

#### **PROGRAM COMMITTEE MEMBER OF INTERNATIONAL WORKSHOPS**

- 2022**                      1<sup>st</sup> International Workshop on the Foundations of Infrastructure Specification and Testing (FIST)
- 2021**                      5<sup>th</sup> International Workshop on Machine Learning Techniques for Software Quality Evaluation (MaLTesQuE)  
4<sup>th</sup> International Workshop on Software Health (SoHeal)
- 2020**                      19<sup>th</sup> Belgium-Netherlands Software Evolution Workshop (BENEVOL)  
4<sup>th</sup> International Workshop on Machine Learning Techniques for Software Quality Evaluation (MaLTesQuE)
- 2019**                      2<sup>nd</sup> International Workshop on Cloud-Native Applications Design and Experience (CNAX)  
3<sup>rd</sup> International Workshop on Machine Learning Techniques for Software Quality Evaluation (MaLTesQuE)
- 2018**                      1<sup>st</sup> International Workshop on Cloud-Native Applications Design and Experience (CNAX)  
2<sup>nd</sup> Workshop on Machine Learning Techniques for Software Quality Evaluation (MaLTesQuE)

#### **REVIEWER FOR INTERNATIONAL JOURNALS AND CONFERENCES**

- INTERNATIONAL JOURNALS**                      Empirical Software Engineering - Springer  
IEEE Access - IEEE  
IEEE Software - IEEE  
IET Software - Institution of Engineering and Technology  
Information and Software Technology - Elsevier  
Journal of Software: Evolution and Process - Wiley  
Journal of Systems and Software – Elsevier  
Science of Computer Programming - Elsevier  
Software Quality Journal - Springer  
Transactions on Software Engineering - IEEE  
Transactions on Software Engineering and Methodology - ACM
- INTERNATIONAL CONFERENCES**                      Innovations in Software Engineering Conference: 2022  
IEEE International Conference on Program Comprehension: 2021, 2019, 2016  
International Conference on Evaluation and Assessment in Software Engineering: 2020  
IEEE International Conference on Software Analysis, Evolution, and Reengineering: 2018, 2017  
IEEE International Conference on Software Maintenance and Evolution: 2020, 2019, 2018, 2016 (New Ideas and Emerging Results Track)  
International Conference on Business Information Systems: 2016, 2015  
International Conference on Distributed Multimedia Systems: 2016, 2015  
International Conference on Enterprise Information Systems: 2017, 2016, 2015  
International Conference on Mining Software Repositories: 2019

#### **INVITED TALKS**

- 2021**                      **[T10] CODE SMELL DETECTION: THE ECSTASY OF MACHINE LEARNING**  
Utrecht University, Utrecht, October 6<sup>th</sup>, 2021

**[T9] MACHINE LEARNING FOR SOFTWARE ENGINEERING: THE GOOD, THE BAD, AND THE UGLY**  
University of Milano Bicocca, Virtual, July 7<sup>th</sup>, 2021

**[T8] IMPROVING ENERGY EFFICIENCY OF MOBILE APPLICATIONS IN THE INTERNET OF THINGS**  
Summer School on IoT, University of Salerno, Virtual, April 9<sup>th</sup>, 2021

**2020** **[T7] MACHINE LEARNING FOR SOFTWARE ENGINEERING: THE GOOD, THE BAD, AND THE UGLY**  
Eindhoven University of Technology, Virtual, December 10<sup>th</sup>, 2020

**[T6] IMPROVING ENERGY EFFICIENCY OF MOBILE APPLICATIONS IN THE INTERNET OF THINGS**  
Summer School on IoT, University of Salerno, Virtual, June 3<sup>rd</sup>, 2020

**[T5] DEFECT PREDICTION: USING MACHINE LEARNING FOR FOCUSING THE TESTING EFFORT**  
University of Salerno, Virtual, March 25<sup>th</sup>, 2020

**2019** **[T4] MINING SOURCE CODE^3: MINING IDIOMS, USAGES, AND EDITS**  
FOSDEM, Brussels, Belgium, February 3<sup>rd</sup>, 2019

**2018** **[T3] DEFECT PREDICTION: USING MACHINE LEARNING FOR FOCUSING THE TESTING EFFORT**  
Jheronimus Academy of Data Science, 's-Hertogenbosch, The Netherlands, March 9<sup>th</sup>, 2018

**2017** **[T2] DEFECT PREDICTION: USING MACHINE LEARNING FOR FOCUSING THE TESTING EFFORT**  
Jheronimus Academy of Data Science, 's-Hertogenbosch, The Netherlands, December 5<sup>th</sup>, 2017

**[T1] DIAGNOSE AND DETECT ENERGY FLAWS OF ANDROID APPS**  
Vrije Universiteit Brussel, Brussels, Belgium. March 23<sup>rd</sup>, 2017

## MEMBERSHIPS

**04/2021 - CURRENT** **MEMBER-AT-LARGE OF THE IEEE CONFERENCE ACTIVITIES COMMITTEE (CAC)**

**11/2020 - CURRENT** **CO-LEADER OF THE OASIS TOSCA EMERGING COMPUTE PLATFORMS AD-HOC**

**01/2020 - CURRENT** **MEMBER OF THE OASIS TOSCA TECHNICAL COMMITTEE**

## AWARDS

**2022** **BEST REVIEWER AWARD 2021**  
Journal of Systems and Software (JSS), Elsevier

**2021** **DISTINGUISHED REVIEWER AWARD 2020**  
Transactions on Software Engineering and Methodologies (TOSEM), ACM

**BEST REVIEWER AWARD 2020**  
Journal of Systems and Software (JSS), Elsevier

**2020** **BEST REVIEWER AWARD 2019**  
Journal of Systems and Software (JSS), Elsevier

**2017** **NSF TRAVEL SUPPORT**  
Symposium on Search-Based Software Engineering (SSBSE), Raleigh, NC, United States

**2015** **ACM SIGSOFT STUDENT TRAVEL GRANT**  
37<sup>th</sup> ACM/IEEE International Conference on Software Engineering (ICSE), Florence, Italy

## **COMMITTEE MEMBER OF PH.D. JURIES**

**2020**

**INVESTIGATING PERFORMANCE ISSUES IN MOBILE APPS**

Teerath Das, Gran Sasso Science Institute, Italy  
promoted by Prof. Massimiliano Di Penta and Dr. Ivano Malavolta

## **COMMITTEE MEMBER OF PDENG JURIES**

**2021**

**PREDICTING SALES QUANTITY FOR NEWLY PUBLISHED BOOKS IN BRUNA STORES**

Kristof Menyhart, Jheronimus Academy of Data Science, The Netherlands

**CUSTOMER ANALYSIS AND A DESIGN OF A CROSS-DOMAIN PERSONALIZED RECOMMENDER SYSTEM FOR AUDAX GROEP**

Bethany Orense, Jheronimus Academy of Data Science, The Netherlands

Isernia, April 16<sup>th</sup>, 2022