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Davide Fucci

Citizenship

Italian

Research Interests

Empirical software engineering, Agile software development and testing, affective computing and psycho-physiology for software and requirements engineering. I have a strong interest in methodological aspects and empirical approaches, as well as open science.

Education

University of Oulu, *Oulu, Finland* — *2013–2016*
Ph.D. in Software Engineering *with honors, May 2016*
Advisors: Prof. Burak Turhan & Prof. Markku Oivo

University of Oulu, *Oulu, Finland* — *2010–2012*
Master degree in Computer Science*grade 4/5, September 2012*

University of Bari, *Bari, Italy* — *2009–2010*
Master degree in Computer Science

University of Bari, *Bari, Italy* — *2004–2008*
Bachelor degree in Computer Science*grade 96/100, December 2008*

Employment

HITeC e.V. & University of Hamburg, *Hamburg, Germany* — *2/2017–*
Post-doctoral Researcher

University of Oulu, *Oulu, Finland* — *6/2016–12/2016*
Post-doctoral Researcher

PaneMerkille Ay, *Oulu, Finland* — *07/2012–12/2014*
Founder & CTO
Founded a startup as a spin-off of university project.
Developed front-end and back-end using Javascript technologies.

Advanced Computer Systems, *Trani, Italy* — *5/2007–08/2009*
Software developer
Developed test infrastructure for legacy code.
Developerd in-house DHW solution using C# and .NET technologies.

Teaching Experience (Classroom)

Instructor, Designer, — *Spring 2018*
CS4240: Large-Scale Parallel Data Processing — *Northeastern*

Instructor, Designer, — *Fall 2016*
CS7680: Programming Models for Distributed Computation — *Northeastern*

Co-Instructor, Co-Designer, (*with Viktor Kunčak & Martin Odersky)* — *Spring 2016*
CS 206: Parallelism & Concurrency — *EPFL*

Co-Instructor, Co-Designer, (*with Viktor Kunčak & Martin Odersky)* — *Spring 2015*
CS 212: Reactive Programming & Parallelism — *EPFL*

(Lead) Teaching Assistant, — *Fall 2011-2014*
CS 201: Functional Programming — *EPFL*

Publications: Journals

A Programming Model and Foundation for Lineage-Based Distributed Computation — *JFP 2018 (to appear)*
Heather Miller, Philipp Haller, Normen Müller
Journal of Functional Programming
Special Issue: Programming Languages for Big Data

Publications: Conferences

Simplicitly: Foundations and Applications of Implicit Function Types *POPL 2018*
Martin Odersky, Olivier Blanvillain, Fengyun Liu, Aggelos Biboudis
Heather Miller, Sandro Stucki
ACM SIGPLAN Symposium on Principles of Programming Languages

Function Passing: A Model for Typed, Distributed Functional Programming *SPLASH 2016*
Heather Miller, Philipp Haller, Normen Müller, Joceyln Boullier
ACM SIGPLAN International Symposium on New Ideas, New Paradigms, and Reflections on Programming & Software

Spores: A Type-Based Foundation for Closures in the Age of Concurrency and Distribution *ECOOP 2014*
Heather Miller, Philipp Haller, Martin Odersky
European Conference on Object Oriented Programming

Functional Programming For All! Scaling a MOOC for Students And Professionals Alike *ICSE 2014*
Heather Miller, Philipp Haller, Lukas Rytz, Martin Odersky
ACM SIGSOFT International Conference on Software Engineering

Instant Pickles: Generating Object-Oriented Pickler Combinators for Fast and Extensible Serialization *OOPSLA 2013*
Heather Miller, Philipp Haller, Eugene Burmako, Martin Odersky
ACM SIGPLAN Conference on Object Oriented Programming, Systems, Languages and Applications

Publications: Workshops

Distributed Programming via Safe Closure Passing *PLACES 2015*
Philipp Haller, Heather Miller
Programming Language Approaches to Communication and Concurrency Centric Systems

RAY: Integrating Rx and Async for Direct-Style Reactive Streams *REM 2013*
Philipp Haller, Heather Miller
ACM SPLASH Workshop on Reactivity, Events and Modularity

FlowPools: A Lock-Free Deterministic Concurrent Dataflow Abstraction *LCPC 2012*
Aleksandar Prokopec, Heather Miller, Tobias Schlatter,
Philipp Haller, Martin Odersky
International Workshop on Languages and Compilers for Parallel Computing
Invited to Revised Selected Papers on the 25th International Workshop on Languages and Compilers for Parallel Computing, Lecture Notes in Computer Science, Vol. 7760, 2013

Tools and Frameworks for Big Learning in Scala: Leveraging the Language for High Productivity and Performance *BigLearn 2011*
Heather Miller, Philipp Haller, Martin Odersky
NIPS Workshop on Parallel and Large-Scale Machine Learning

Parallelizing Machine Learning – Functionally: A Framework and Abstractions for Parallel Graph Processing *Scala 2011*
Philipp Haller, Heather Miller
Scala Workshop

The Function Passing Model: Types, Proofs, and Semantics *May 2016*
Philipp Haller, Normen Müller, Heather Miller

Specialising Parsers for Queries *April 2016*
Manohar Jonnalagedda, Jorge Vicente Cantero, Heather Miller, Martin Odersky

Improving Human-Compiler Interaction Through Customizable Type Feedback *December 2014*
Hubert Plociniczak, Heather Miller, Martin Odersky

Self-Assembly: Lightweight Language Extension and Datatype Generic Programming, All-in-One! *August 2014*
Heather Miller, Philipp Haller, Bruno C. d. S. Oliveira

Spores, Formally *December 2013*
Heather Miller, Philipp Haller

FlowPools: A Lock-Free Deterministic Concurrent Dataflow Abstraction – Proofs *June 2012*
Aleksandar Prokopec, Heather Miller, Philipp Haller

External Service

General Chair and/or Program Chair:
Curry On (**Curry On**) *2015, 2016, 2017, 2018*
Trends in Functional Programming in Education (**TFPIE**) *2018*
Scala Symposium (**Scala**) *2013, 2014, 2017*
Programming Models & Languages for Distributed Computation (**PMLDC**) *2016, 2017*

Organizing Committee Member:
Object-Oriented Programming, Systems, Languages & Applications (**OOPSLA**) *2018*
European Conference on Object-Oriented Programming (**ECOOP**) *2015 – 2018*

Program Committee Member:
International Conference on Functional Programming (**ICFP**) *2018*
Object-Oriented Programming, Systems, Languages & Applications (**OOPSLA**) *2017*
Off the Beaten Track (**OBT**) *2018*
Scala Symposium (**Scala**) *2016*
Symposium on Trends in Functional Programming (**TFP**) *2016*
Software Language Engineering (**SLE**) *2016*
Symposium on Applied Computing (**SAC**) *2016*
Programming Language Evolution (**PLE**) *2015*
Domain-Specific Language Design and Implementation (**DSLDI**) *2015*

External Review Committee Member:
PLDI 2018, ECOOP 2016, ECOOP 2013, Scala 2013

Artifact Evaluation Committee: POPL 2015

Diversity & Outreach

Girls Code It: Intensive Pre-College Computer Science Program *Summer 2018*
Conceived of and am organizing large pre-college program aimed at preparing high school-aged girls for a career in Computer Science. *Northeastern*

6 week-long residential program for 100 students which awards college credit and puts alumni of the program on an accelerated CS track upon matriculating at Northeastern University.

ScalaBridge Organizer
Organizer of free full-day workshops on the weekends aimed at teaching women and underrepresented minorities in computing how to think computationally and how to program in Scala.

ScalaBridge Chapters: Basel (CH), Zürich (CH), Copenhagen (DK), Boston (US).

Honors

US National Science Foundation Graduate Research Fellowship	*2011 – 2014*
EPFL Outstanding Teaching Award	*2012*
EPFL Computer Science Fellowship	*2009 – 2010*
Most Outstanding Audio Engineering Student, University of Miami	*2009*
Most Outstanding Eta Kappa Nu Student, University of Miami	*2009*
Information Technology Scholarship, University of Miami	*2006 – 2009*
John Farina Family Scholarship, University of Miami	*2006 – 2009*
Eta Kappa Nu	*2008*
Tau Beta Pi	*2008*
SMART US Department of Defense Scholarship Alternate	*2007*
Cooper Union Full Tuition Scholarship	*2004 – 2006*

Selected Talks

What Happened to Distributed Programming Languages? *Strange Loop & PWLConf 2017* **(invited)**
St. Louis, MO, USA. September 29, 2017

The Dramatic Consequences of the Open Source Revolution: Unrecognized Challenges & Some Modest Attempts at Solutions in Scala *Devoxx 2017* **(invited)**
Paris, France. April 7, 2017

The Dramatic Consequences of the Open Source Revolution & How the Scala Center Hopes to Help *Scala Exchange 2016* **(keynote)**
London, UK. December 9, 2016

Function Passing: A Model for Typed, Distributed Functional Programming *SPLASH 2016*
Amsterdam, The Netherlands. November 2, 2016

Introducing the Scala Center *Scala Days 2016*
New York, NY, US. May 10, 2016 & Berlin, Germany. June 16, 2016 **(keynote)**
(total ~1700 attendees)

Function Passing Style: Typed, Distributed Functional Programming *Strange Loop 2014*
St. Louis, MO, USA. September 19, 2014

Spores: A Type-Based Foundation for Closures in the Age of Concurrency and Distribution *ECOOP 2014*
Uppsala, Sweden. August 1, 2014

Functional Programming For All! Scaling a MOOC for Students and Professionals Alike *ICSE 2014*
Hyderabad, India. June 4, 2014

Academese to English: Scala's Type System, Dependent Types and What It Means To You *NEScala 2014*
New York, NY, USA. March 1, 2014

Instant Pickles: Generating Object-Oriented Pickler Combinators for Fast and Extensible Serialization *OOPSLA 2013*
Indianapolis, IN, USA. October 30, 2013

PL Abstractions for Distributed Programming: Pickle Your Spores! *Indiana University* **(invited)**
Bloomington, IN, USA. October 25, 2013

Spores: Distributable Functions in Scala *Strange Loop 2013*
St. Louis, MO, USA. September 19, 2013

Open Issues in Dataflow Programming *LaME 2013* **(invited)**
Montpellier, France. July 1, 2013

Scala as a Research Tool *ECOOP 2013 Tutorial*
Montpellier, France. July 1, 2013

On Pickles & Spores: Improving Scala's Support for Distributed Programming *ScalaDays 2013*
New York, NY, USA. June 12, 2013

Futures & Promises in Scala 2.10 *PhillyETE 2013* **(invited)**
Philadelphia, PA, USA. April 2, 2013

Students Supervised

Kevin Clancy, *Eventual Consistency via Types* *2016 –*
PhD thesis *Northeastern*

Joceyln Boullier, *Evaluating the Efficiacy of the Function Passing Model* *2/2016 – 8/2016*
M.Sc. thesis *EPFL*

Jorge Vicente Cantero, *Implementing the Function Passing Model* *2/2016 – 6/2016*
B.Sc. thesis *EPFL*

Thaddée Yann Tyl, *Learning Scala Style* *2/2013 – 6/2013*
M.Sc. thesis *EPFL*

References

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