

MARCO GIUNTI

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BIBLIOMETRIC PROFILES

ORCID

0000-0002-7582-0308

- <https://orcid.org/0000-0002-7582-0308>

Scopus

13105720900

- <https://www.scopus.com/authid/detail.uri?authorId=13105720900>

Google Scholar

xdrpRlcAAAAJ

- <https://scholar.google.com/citations?user=xdrpRlcAAAAJ>

web of Science ResearcherID

KIH-6588-2024

- <https://www.webofscience.com/wos/author/record/KIH-6588-2024>

Ciência ID

8B18-7832-4109

- <https://www.cienciavita.pt/8B18-7832-4109>

EDUCATION

PhD in Informatics

Ca' Foscari University

June 2007
Venice, Italy

- “Secure implementations of typed channel abstractions”

MSc (Laurea) in Informatics

Ca' Foscari University

July 2002
Venice, Italy

- 110/110

AFFILIATION

University of Oxford

Research Associate

January 2024 - Present
Oxford, UK

- Multiparty session types

Teesside University

Research Associate

February 2023 - September 2023
Middlesbrough, UK

- Language-based security

University of Beira Interior

Research Associate

March 2022 - January 2023
Covilhã, Portugal

- Formalisation of consensus algorithms

- NOVA School of Science and Technology**
Research Associate March 2019 - February 2022
Caparica, Portugal

 - Distributed concurrency control, Coq
- University of Beira Interior**
Research Associate October 2018 - February 2019
Covilhã, Portugal

 - Why3, CPS monad transformers
- University of Lisbon**
Lecturer September 2016 - August 2018
Lisbon, Portugal

 - Department of Informatics, Faculty of Sciences
- University of Beira Interior**
Lecturer September 2014 - August 2016
Covilhã, Portugal

 - Department of Informatics, Faculty of Engineering
- Autónoma University of Lisbon**
Lecturer September 2015 - August 2016
Lisbon, Portugal

 - Department of Engineering and Computer Science
- University of Porto**
Research Associate March 2014 - August 2014
Porto, Portugal

 - Formalisation of sensor networks
- NOVA School of Science and Technology**
Research Associate August 2012 - February 2014
Caparica, Portugal

 - Behavioural type systems
- École Polytechnique**
Research Associate February 2011 - January 2012
Palaiseau, France

 - Language-based security
- IUAV University**
Research Associate April 2009 - September 2010
Venice, Italy

 - Formalisation of geospatial web services
- University of Lisbon**
Research Associate April 2008 - March 2009
Lisbon, Portugal

 - Session types

RESEARCH OUTPUTS

- ECOOP 2024**
Behavioral up/down casting for statically typed languages September 2024
Vienna, Austria

 - Co-authored by Lorenzo Bacchiani, Mario Bravetti, João Mota and António Ravara
- OOPSLA 2023**
AtomiS: Data-centric synchronization made practical October 2023
Lisbon, Portugal

 - Co-authored by Jan Cederquist, Ana Matos, João Matos, Hervé Paulino, and António Ravara

- ECOOP 2023** July 2023
On using VeriFast, VerCors, Plural, and KeY to check object usage Seattle, WA
- Co-authored by João Mota and António Ravara
- SAC 2023** March 2023
Anticipation of Method Execution in Mixed Consistency Systems Tallinn, Estonia
- Co-authored by Hervé Paulino and António Ravara
- Science of Computer Programming** 2022 (221: 102844)
A Java typestate checker supporting inheritance
- Co-authored by Lorenzo Bacchiani, Mario Bravetti, João Mota and António Ravara
- Coordination 2021** June 2021
Java typestate checker Malta
- Co-authored by João Mota and António Ravara
- Coordination 2020** June 2020
GoPi: Compiling Linear and Static Channels in Go Malta
- <https://sites.fct.unl.pt/gopi/>
- Mathematical Structures in Computer Science** 2016 (26(2): 206-237)
Linearity, session types and the Pi calculus
- Co-authored by Vasco Vasconcelos
- Automated Specification and Verification of Web Systems 2015** June 2015
Unlocking Blocked Communicating Processes Oslo, Norway
- Co-authored by Adrian Francalanza and António Ravara
- Secure IT Systems - 19th Nordic Conference** October 2014
Static Semantics of Secret Channel Abstractions Tromsø, Norway
- <https://link.springer.com/book/10.1007/978-3-319-11599-3>
- The Journal of Logic and Algebraic Programming** 2013 (82(8): 263-281)
Algorithmic type checking for a pi-calculus with name matching and session types
- <https://doi.org/10.1016/j.jlap.2013.05.003>
- Trustworthy Global Computing - 8th International Symposium** August 2013
Towards Static Deadlock Resolution in the pi-calculus Buenos Aires, Argentina
- Co-authored by António Ravara
- EXPRESS/SOS 2012** September 2012
Hide and New in the Pi-Calculus Newcastle upon Tyne, UK
- Co-authored by Catuscia Palamidessi and Frank D. Valencia
- Automated Specification and Verification of Web Systems 2011** June 2011
A type checking algorithm for qualified session types Reykjavik, Iceland
- <https://arxiv.org/abs/1108.2360v1>
- CONCUR 2010** August 2010
A Linear Account of Session Types in the Pi Calculus Paris, France

- Co-authored by Vasco Vasconcelos

POPL 2007

Secure implementations of typed channel abstractions

January 2007

Nice, France

- Co-authored by Michele Bugliesi

Trustworthy Global Computing - International Symposium

Typed Processes in Untyped Contexts

April 2005

Edinburgh, UK

- Co-authored by Michele Bugliesi

Peer Reviewed Communications

Communications in Conferences and Workshops

- *Lupin COPES with blockchain consensus*. INForum 2024. Co-authored by António Ravara, Francisco Santos, Leonardo Santos, Simão Melo de Sousa
- *Type qualifier inference and code synthesis for a better data-centric synchronisation experience: 16th Interaction and Concurrency Experience (ICE 2023)*, <http://www.discotec.org/2023/ice.html>. Co-authored by Jan Cederquist, Ana Matos, João Matos, Hervé Paulino, and António Ravara
- *Compiling linear and static channels in Go*. INForum 2019.
- *Pointing to Private Names: 12th Int. Workshop on Developments in Computational Models (DCM 2018)*, <https://easychair.org/publications/preprint/v3VM>. Co-authored by Adrian Francalanza and António Ravara
- *Session-based type discipline for pi calculus with matching: Programming Language Approaches to Concurrency and Communication-cEntric Software ((PLACES 2009)*, <http://ctp.di.fct.unl.pt/~mgiunti/slides-places09.pdf>. Co-authored by Kohei Honda, Vasco Vasconcelos and Nobuko Yoshida
- *Preventing intrusions through non-interference: IEEE Mexican Conference on Informatics Security (MCIS 2006)*, http://ctp.di.fct.unl.pt/~mgiunti/giunti-preventing_intrusions.pdf.

Online Resources

Technical reports, software artefacts, and software repositories

- *A Mechanisation for a Typed Semantics of the Linear Pi-Calculus*: <https://doi.org/10.5281/zenodo.13734438> (Sept. 2024). Co-authored by Adrian Francalanza and António Ravara
- *Sound Atomicity Inference for Data-Centric Synchronization*: <https://arxiv.org/abs/2309.05483> (Sept. 2023). Co-authored by Jan Cederquist, Ana Matos, João Matos, Hervé Paulino, and António Ravara
- *Anticipation of Method Execution in Mixed Consistency Systems – Technical Report*: <https://arxiv.org/abs/2212.14651> (Dec. 2022). Co-authored by Hervé Paulino and António Ravara
- *On using VeriFast, VerCors, Plural, and KeY to check object usage*: <https://arxiv.org/abs/2209.05136> (Sept. 2022). Co-authored by João Mota and António Ravara
- *AtomiS: data-centric concurrency control made simple*: <https://doi.org/10.5281/zenodo.6346649> (March 2022) Co-authored by Jan Cederquist, Ana Matos, João Matos, Hervé Paulino, and António Ravara
- *The GoPi compiler*: <https://github.com/marcogiunti/gopi> (2019)
- *A mechanized proof of correctness of the Horn algorithm*: https://release.di.ubi.pt/factor/pdfs/A_mechanized_proof_of_correctness_of_the_Horn_algorithm.pdf (2019)
- *Rewinding functions through CPS*: https://release.di.ubi.pt/factor/pdfs/rewind_exp_report.pdf (2019)

- *Type safety without subject reduction for session types*: http://di.ciencias.ulisboa.pt/~vv/papers/vasconcelos.giunti.etal_type-safety-session-types.pdf (2010). Co-authored by Kohei Honda, Vasco Vasconcelos and Nobuko Yoshida

SUPERVISION

João Mota, PhD Candidate

Co-Supervisor

Present

NOVA School of Science and Technology, Portugal

- Coping with shared mutable state in a type-state oriented concurrent language

Leonardo Mendes dos Santos, MSc

Co-Supervisor

2024

University of Beira Interior, Portugal

- A DSL for rapid prototyping of consensus algorithms – Theory

Francisco Conceição Santos, MSc

Co-Supervisor

2024

University of Beira Interior, Portugal

- A DSL for rapid prototyping of consensus algorithms – Implementation

Miguel Alves, MSc

Co-Supervisor

2022

NOVA School of Science and Technology, Portugal

- A Framework for Specification and Simulation of Consensus Protocols. <https://run.unl.pt/handle/10362/169642>

João Mota, MSc

Co-Supervisor

2021

NOVA School of Science and Technology, Portugal

- Coping with the reality: adding crucial features to a typestate-oriented language. <https://run.unl.pt/handle/10362/125329>

TEACHING

Distributed Processes, Types and Programming

Tutor

Michaelmas 2024

University of Oxford

- Reference Language: Go

Theory of Computation

Coordinator

Academic Year 2017/18

University of Lisbon

- Master in Cognitive Science

Programming 1

Collaborator

Academic Year 2017/18

University of Lisbon

- Reference language: Python

Programming 2

Collaborator

Academic Year 2017/18

University of Lisbon

- Reference language: Python

Object-Oriented Programming

Collaborator

Academic Year 2017/18

University of Lisbon

- Reference language: Java

- Laboratory of Programming**
Collaborator Academic Year 2017/18
University of Lisbon
- Reference language: Java
- Programming 1**
Collaborator Academic Year 2016/17
University of Lisbon
- Reference language: Python
- Programming 2**
Collaborator Academic Year 2016/17
University of Lisbon
- Reference language: Python
- Object-Oriented Programming**
Collaborator Academic Year 2016/17
University of Lisbon
- Reference language: Java
- Laboratory of Programming**
Collaborator Academic Year 2016/17
University of Lisbon
- Reference language: Java
- Computational Logic**
Coordinator Academic Year 2015/16
University of Beira Interior
- <http://ctp.di.fct.unl.pt/~mgiunti/teaching/lc/lc.html>
- Theory of Computation**
Collaborator Academic Year 2015/16
University of Beira Interior
- Reference language: OCaml
- Object-Oriented Programming**
Coordinator Academic Year 2015/16
Autónoma University of Lisbon
- Reference language: Java
- Paradigms of Programming**
Coordinator Academic Year 2015/16
Autónoma University of Lisbon
- Reference language: OCaml
- Programming 1**
Coordinator Academic Year 2014/15
University of Beira Interior
- Reference language: C
- Programming 2**
Coordinator Academic Year 2014/15
University of Beira Interior
- Reference language: C
- Theory of Computation**
Collaborator Academic Year 2014/15
University of Beira Interior
- Reference language: OCaml

PROJECTS

- POST: Protocols, Observabilities and Session Types** January 2023 - Present
Participant EPSRC, UK
 · EP/T006544/2
- TaRDIS: Trustworthy and Resilient Decentralised Intelligence for Edge Systems** January - December 2024
Participant EU HORIZON
 · EP/T006544/2
- Smart Types and Smart Virtual Machines for Validated Smart Contracts** March 2023 - Present
Co-Principal Investigator FCT, Portugal
 · FCT 2022.09138.PTDC
- European Research Network on Formal Proofs** October 2021 – Present
Participant EU COST
 · <https://europroofnet.github.io/>
- Consensus Protocols Evaluation and Simulation** July 2020 - June 2024
Participant CoEnzyme, France
 · Project supported by private company
- Quantified Information Flow Control in Cloud Computing Systems** February - September 2023
Participant DASA, UK
 · ACC2028868
- Behavioural Application Program Interfaces** March 2018 – December 2023
Participant EU RISE
 · <https://www.um.edu.mt/projects/behapi/>
- PROSE (Provers for Sessions)** April 2019 – March 2020
Participant INRIA, France
 · <https://raweb.inria.fr/rapportsactivite/RA2019/stamp/uid65.html>
- Distributed Data-Centric Concurrency Control** March 2019 - February 2022
Participant FCT, Portugal
 · PTDC/CCI-COM/32166/2017
- Functional Approach Teaching Portuguese Courses** October 2018 - February 2019
Participant Tezos Foundation, France
 · <https://release.di.ubi.pt/factor/index.html>
- European research network on types for programming and verification** March 2016 – February 2020
Participant EU COST
 · <https://eutypes.cs.ru.nl/>
- Languages And Tools for Critical Real-time Systems** March - September 2014
Participant FCT, Portugal
 · NORTE-07-0124-FEDER-000062
- Behavioural Types for Reliable Large-Scale Software Systems** October 2012 – January 2016
Participant EU COST

· <http://www.dcs.gla.ac.uk/research/betty/www.behavioural-types.eu/>

Liveness, statically: Behavioural Types for Statically Checking Liveness Properties August 2012- February 2014
Participant *FCT, Portugal*

· PTDC/EIA-CCO/117513/2010

Software Engineering for Service-Oriented Overlay Computers March 2008 – February 2009
Participant *EU IST*

· <http://www.sensoria-ist.eu/>

Models and Types for Security in Mobile Distributed Systems January 2005 - July 2007
Participant *EU IST*

· <https://www.dsi.unive.it/myths/>

EVENT ORGANISATION

40th ACM/SIGAPP Symposium On Applied Computing April 2025
Co-Chair (Programming Languages Track) *Catania, Italy*

· <https://www.sigapp.org/sac/sac2025/>

39th ACM/SIGAPP Symposium On Applied Computing April 2024
Co-Chair (Programming Languages Track) *Avila, Spain*

· <https://www.sigapp.org/sac/sac2024/file2024/TOC-Feb19.pdf>

ASSOCIATION MEMBER

ACM November 2024 - Present

· <https://www.acm.org>

Wolfson College (Common Room), Oxford, UK, March 2024 - Present

· <https://www.wolfson.ox.ac.uk/>

ACM, Special Interest Group on Applied Computing (SIGAPP), June 2023 - May 2024

· <https://www.acm.org/special-interest-groups/sigs/sigapp>

DISTINCTIONS

3rd Place – INNCYBER INNOVATION HUB Call for Projects October 2023
Java tpestate checker *Lisbon, Portugal*

· Co-awarded to Lorenzo Bacchiani, Mario Bravetti, João Mota and António Ravara

Marie Curie ESR Fellowship Grant January 2011
Secrecy and the pi calculus *École Polytechnique & INRIA, France*

· Awarded by ERCIM

PhD Grant November 2004
Secure implementations of typed channel abstractions *Ca' Foscari University, Italy*

· Awarded by Ministry of University and Research