Juan Manuel Copia

PhD Student

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Employment History

Since 2021 **Research Assistant**
IMDEA Software Institute, Madrid, Spain.

2019 - 2020 **Research Scholarship**
Department of Computer Science, University of Río Cuarto, Argentina.

Summer 2019 **Summer Internship**
McAfee, Argentina.

2018 - 2019 **Student Teaching Assistant**
Department of Computer Science, University of Río Cuarto, Argentina.

Education

Since 2021 **Ph.D. in Computer Science**
Universidad Politécnica de Madrid, Madrid, Spain.

2015 - 2020 **Undergraduate degree in Computer Science** (5-year + thesis)
Department of Computer Science, University of Río Cuarto, Argentina. GPA: 9.02.

2015 - 2018 **Undergraduate degree in Computer Science** (3-year + final project)
Department of Computer Science, University of Río Cuarto, Argentina. GPA: 8.81.

Publications

May 2024 **Improving Patch Correctness Analysis via Random Testing and Large Language Models**.
F. Molina, J. M. Copia, A. Gorla.
IEEE International Conference on Software Testing, Verification and Validation ICST 2024, Toronto, Canada, to appear.

October 2023 **Precise Lazy Initialization for Programs with Complex Heap Inputs**
J. M. Copia, F. Molina, N. Aguirre, M. Frias, A. Gorla, P. Ponzio.
IEEE International Symposium on Software Reliability Engineering, ISSRE 2023, Florence, Italy, pp. 752-762.

October 2022 **LISSA: Lazy Initialization with Specialized Solver Aid**
J. M. Copia, P. Ponzio, N. Aguirre, A. Gorla, M. Frias.
IEEE/ACM International Conference on Automated Software Engineering, ASE 2022, Rochester, MI, USA, Article 67, 1–12.

May 2022 **Use of Test Doubles in Android Testing: An In-Depth Investigation**
M. Fazzini, C. Choi, J. M. Copia, G. Lee, Y. Kakehi, A. Gorla, A. Orso.
ACM/IEEE International Conference on Software Engineering, ICSE 2022, Pittsburgh, USA, pp. 2266-2278.

Developed Open-source Software Artifacts

LISSA and PLI	Symbolic execution techniques for programs with complex heap.
SymSolve.	A solver for structural constraints of heap-allocated objects.
PySEAT.	A symbolic execution engine for python programs.

Public Talks

April 2024	**Precise Lazy Initialization for Programs with Complex Heap Inputs.** Workshop, KLEE Workshop on Symbolic Execution, Lisbon, Portugal.
October 2023	**Precise Lazy Initialization for Programs with Complex Heap Inputs.** Research Track, ISSRE 2023, Florence, Italy.
October 2022	**LISSA: Lazy Initialization with Specialized Solver Aid.** Research Track, ASE 2022, Oakland Center, Michigan, USA.
September 2022	**LISSA: Lazy Initialization with Specialized Solver Aid.** Oral communication, IMDEA Software S3 Seminar Series, Madrid, Spain.
March 2022	**A Satisfiability Solver for Symbolic Structures with Complex Representation Invariants.** Oral communication, FACAS 2022, La Falda, Córdoba, Argentina.

Others

Research Topics	My main research interests are related to program analysis and software testing. I like to apply software engineering techniques to solve complex problems and I also enjoy developing such solutions.
Programming Languages	Proficient in **Java** and **Python**.
Spoken Languages	Fluent in **Spanish**, **English** and **French**.
Cultural Experiences	5 month academic exchange in Universidad de Tarapacá, Arica, Chile. 4 month cultural immersion in France.