Facundo MOLINA

PERSONAL INFORMATION

NATIONALITY:	Argentinian
ADDRESS:	Río Cuarto - Córdoba - Argentina
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WEBSITE:	https://facumolina.github.io

EDUCATION

2017 - 2022 **Ph.D., Computer Science**
Dissertation: Techniques based on Learning and Search for Specification Inference
Faculty of Mathematics, Astronomy, Physics and Computing - FaMaF
University of Córdoba - Argentina

2012 - 2017 **Computer Science Licenciate**
(5-year + thesis undergraduate program of study)
Department of Computer Science - FCEFQyN
University of Río Cuarto - Argentina
THESIS PROJECT: Automatic Learning of Relational Specifications using
Evolutionary Computation
AVERAGE SCORE: 9.43 out of 10

2012 - 2014 **B.S. in Computer Science**
Department of Computer Science - FCEFQyN
University of Río Cuarto - Argentina
THESIS PROJECT: Project in the course of Distributed and Outsourced
Software Engineering
AVERAGE SCORE: 9.33 out of 10

PUBLICATIONS

MAY 2022 **Fuzzing Class Specifications**
Facundo Molina, Marcelo d'Amorim and Nazareno Aguirre.
Proceedings of the 44th ACM/IEEE International Conference
on Software Engineering, ICSE 2022, Pittsburgh, USA, May 22-27 2022.

MAY 2021 **EvoSpex: An Evolutionary Algorithm for Learning Postconditions**
Facundo Molina, Pablo Ponzio, Nazareno Aguirre and Marcelo Frias.
Proceedings of the 43rd ACM/IEEE International Conference
on Software Engineering, ICSE 2021, Madrid, Spain, May 23-29 2021.

SEPTEMBER 2020 **Applying Learning Techniques to Oracle Synthesis**
Facundo Molina
Doctoral Symposium, Proceedings of the 35th IEEE/ACM International Conference
on Automated Software Engineering, ASE 2020, Australia, September 21-25, 2020.

JULY 2019 **An Evolutionary Approach to Translating Operational Specifications
into Declarative Specifications** - Facundo Molina, César Cornejo, Renzo

Degiovanni, Germán Regis, Pablo Castro, Nazareno Aguirre and Marcelo Frias
Science of Computer Programming, Volume 181, Pages 47-63, 2019.

MAY 2019   **Training Binary Classifiers as Data Structure Invariants**
Facundo Molina, Pablo Ponzio, Renzo Degiovanni, Germán Regis,
Nazareno Aguirre and Marcelo Frias
Proceedings of the 41th International Conference on Software Engineering,
ICSE 2019, Montreal, Canada, May 25-31, 2019.

SEPTEMBER 2018   **A Genetic Algorithm for Goal-Conflict Identification**
Renzo Degiovanni, Facundo Molina, Germán Regis and Nazareno Aguirre
Proceedings of the 33rd ACM/IEEE International Conference on Automated
Software Engineering, ASE 2018, Montpellier, France, September 3-7, 2018.

MAY 2018   **From Operational to Declarative Specifications using a Genetic**
Algorithm - Facundo Molina, Renzo Degiovanni, Germán Regis, Pablo Castro,
Nazareno Aguirre and Marcelo Frias
Proceedings of the 11th International Workshop on Search-Based Software Testing,
SBST@ICSE 2018, Gothenburg, Sweden, May 28-29, 2018.

NOVEMBER 2016   **An Evolutionary Approach to Translate Operational Specifications**
into Declarative Specifications - Facundo Molina, César Cornejo, Renzo
Degiovanni, Germán Regis, Pablo Castro, Nazareno Aguirre and Marcelo Frias
Proceedings of the 19th Brazilian Symposium on Formal Methods
SBMF 2016, Natal, Brazil, November 22-25, 2016.

AWARDS & DISTINCTIONS

2020   **Latin America PhD Award**
A research award for PhD students in computing related fields in their 3rd year
or beyond at universities in Latin America, and granted by Microsoft Research.

2018   **Best Paper Award**
From Operational to Declarative Specifications using a Genetic Algorithm
11th International Workshop on Search-Based Software Testing, SBST 2018.

2016   **Best Paper Award**
An Evolutionary Approach to Translate Operational Specifications into
Declarative Specifications, 19th Brazilian Symposium on Formal Methods, SBMF 2016.

2016   **University of Rio Cuarto flag bearer for a 1-year period**
Traditional honour in educational institutions in Argentina to the three top students
in the institution.

Grants & Scholarships

2017   **Doctoral Scholarship**
5-year Scholarship granted by Argentina's National Scientific and Technical Research Council (CONICET) to fund doctoral students.

2016   **EVC-CIN Scholarship**
1-year Scolarship granted by the argentinian National Inter University Council (CIN) to encourage undergraduate students to pursue scientific vocations.

Services

2021   **Program Committee**
1st International Workshop on Test Oracles, TORACLE 2021 (at ESEC/FSE 2021).

2017 - 2022   **Student Volunteer**
44th International Conference on Software Engineering, ICSE 2022.
43rd International Conference on Software Engineering, ICSE 2021.
41th International Conference on Software Engineering, ICSE 2019.
33rd ACM/IEEE International Conference on Automated Software Engineering, ASE 2018.
39th International Conference on Software Engineering, ICSE 2017.

Teaching Background

MARCH 2018 - PRESENT   **Teaching Assistant**
COURSES: Computability and Complexity, Distributed and Outsourced Software Engineering, Introduction to Programming.
Department of Computer Science - FCEFQyN
University of Río Cuarto - Argentina

AUGUST 2014 - JUNE 2017   **Student Teaching Assistant**
COURSES: Data Structures and Algorithms, Algorithms Design Techniques, Programming Paradigms, and System Design and Analysis.
Department of Computer Science - FCEFQyN
University of Río Cuarto - Argentina

Extracurricular Courses Taken

OCTOBER 2019   **Neural Networks and Deep Learning** - Adjunct Professor Andrew Ng
Foundations of Deep Learning
An online non-credit course authorized by deeplearning.ai
Coursera

MARCH 2019   **Introduction to Data Science in Python** - Christopher Brooks
Introduction to data manipulation and cleaning techniques using pandas
An online non-credit course authorized by University of Michigan
Coursera

AUGUST 2018 NOVEMBER 2018   **Neural Networks** - Dr. Francisco Tamarit
Mathematical Foundations of Artificial Neural Networks

Postgraduate courses
University of Córdoba - Argentina

August 2017
November 2017

Text Mining - Dr. Laura Alonso Alemany
Text Mining techniques applied to Natural Language Processing problems (Word similarity, Document clustering, Sense discrimination, Machine translation)
Postgraduate courses
University of Córdoba - Argentina

August 2017
November 2017

Information and its Demons - Dr. Javier Blanco
Information Philosophy
Postgraduate courses
University of Río Cuarto - Argentina

February 2017

Human Dynamics: Data, Networks and Modelling - Dr. Márton Karsai
Summer School of Computer Science RIO 2017
University of Río Cuarto - Argentina

March 2016
June 2016

Software Testing - Dr. Renzo Degiovanni
Main software testing techniques using state-of-the-art tools
Postgraduate courses
University of Río Cuarto - Argentina

February 2016

Systematic Test Case Generation - Prof. Sarfraz Khurshid
Summer School of Computer Science RIO 2016
University of Río Cuarto - Argentina

February 2016

Symbolic Program Analysis - Prof. Willem Visser
Summer School of Computer Science RIO 2016
University of Río Cuarto - Argentina

February 2015

Description Logic Reasoning - Dr. Anni-Yasmin Turhan
Summer School of Computer Science RIO 2015
University of Río Cuarto - Argentina

February 2015

Fundamentals of Quantum Programming Languages - Dr. Alejandro Díaz-Caro
Summer School of Computer Science RIO 2015
University of Río Cuarto - Argentina

Languages

Spanish: Mother tongue
English: Fluent