Facundo MOLINA

PERSONAL INFORMATION

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

EDUCATION

2017 - PRESENT
Ph.D. student in Computer Science
Software Engineering - Formal Methods - Machine Learning
The main research direction is the application of machine learning techniques to program analysis tasks.
Department of Computer Science - FCEFQyN
University of Río Cuarto - 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.
To appear in the 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 - 2021   **Student Volunteer**
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, and Project.
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 **Text Mining** - Dr. Laura Alonso Alemany
November 2017 *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 **Information and its Demons** - Dr. Javier Blanco
November 2017 *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 **Software Testing** - Dr. Renzo Degiovanni
June 2016 *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