

Facundo MOLINA

PERSONAL INFORMATION

NATIONALITY: Argentinian
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WEBSITE: <https://facumolina.github.io>

EDUCATION

- 2017 - **Ph.D. student in Computer Science**
PRESENT 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 Licenciante**
(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 2021 **EvoSpex: An Evolutionary Algorithm for Learning Postconditions**
Facundo Molina, Pablo Ponzio, Nazareno Aguirre and Marcelo Frias.
To appear in the 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, SBF 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 Scholarship 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 **Teaching Assistant**
- PRESENT 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 **Student Teaching Assistant**
- JUNE 2017 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 **Neural Networks** - Dr. Francisco Tamarit
NOVEMBER 2018 *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