

# Facundo MOLINA

## PERSONAL INFORMATION

---

PLACE AND DATE OF BIRTH: Carnerillo - Córdoba - Argentina — 1994 August 12  
NATIONALITY: Argentinian  
ADDRESS: Río Cuarto - Córdoba - Argentina  
PHONE: +54 9 358 4838631  
EMAIL: [fmolina@dc.exa.unrc.edu.ar](mailto:fmolina@dc.exa.unrc.edu.ar)  
LINKEDIN: <https://www.linkedin.com/in/facundo-molina/>  
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 **M.S. in Computer Science**  
*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

---

- 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 SBFM 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 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, SBFM 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 the Argentina's National Scientific and Technical Research Council (CONICET) to finance the doctorate carrer of graduate 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

---

- 2019    **Student Volunteer**  
*41th International Conference on Software Engineering, ICSE 2019  
Montreal, Canada.*

- 2018 **Student Volunteer**  
*33rd ACM/IEEE International Conference on Automated Software Engineering, ASE 2018*  
*Montpellier, France.*
- 2017 **Student Volunteer**  
*39th International Conference on Software Engineering, ICSE 2017*  
*Buenos Aires, Argentina.*

## TEACHING BACKGROUND

---

- AUGUST 2020 **Teaching Assistant**  
- PRESENT COURSE: Project  
*Department of Computer Science - FCEFQyN*  
*University of Río Cuarto - Argentina*
- MARCH 2019 **Teaching Assistant**  
- JUNE 2020 COURSE: Introduction to Programming  
*Department of Computer Science - FCEFQyN*  
*University of Río Cuarto - Argentina*
- AUGUST 2018 **Teaching Assistant**  
- DECEMBER 2018 COURSE: Distributed and Outsourced Software Engineering  
*Department of Computer Science - FCEFQyN*  
*University of Río Cuarto - Argentina*
- MARCH 2018 **Teaching Assistant**  
- JUNE 2018 COURSE: Computability and Complexity  
*Department of Computer Science - FCEFQyN*  
*University of Río Cuarto - Argentina*
- MARCH 2017 **Student Teaching Assistant**  
- JUNE 2017 COURSE: Algorithm Design Techniques  
*Department of Computer Science - FCEFQyN*  
*University of Río Cuarto - Argentina*
- AUGUST 2016 - **Student Teaching Assistant**  
NOVEMBER 2016 COURSE: Programming Paradigms  
*Department of Computer Science - FCEFQyN*  
*University of Río Cuarto - Argentina*
- MARCH 2016 **Student Teaching Assistant**  
- JUNE 2016 COURSE: System Design and Analysis  
*Department of Computer Science - FCEFQyN*  
*University of Río Cuarto - Argentina*
- AUGUST 2015 - **Student Teaching Assistant**  
NOVEMBER 2015 COURSE: Programming Paradigms  
*Department of Computer Science - FCEFQyN*  
*University of Río Cuarto - Argentina*
- MARCH 2015 **Student Teaching Assistant**  
- JUNE 2015 COURSE: Algorithm Design Techniques  
*Department of Computer Science - FCEFQyN*

University of Río Cuarto - Argentina

AUGUST 2014 - **Student Teaching Assistant**  
NOVEMBER 2014 COURSE: Data Structures and Algorithms  
*Department of Computer Science - FCEFQyN*  
*University of Río Cuarto - Argentina*

## COURSES

---

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 language  
ENGLISH:    Fluid