# Eduard Ionel

## Education

#### **University of Parma**

PhD in Mathematics

- Final score: Excellent with honors
- Represented PhD students in the Department of Mathematics and Computer Science Council of University of Ferrara, and in the Academic Board of University of Parma for the 35th cycle

#### **University of Udine**

MSc in Computer Science; Minor in Automated Reasoning

- Final score: 110/110 with honors
- Represented students in the Quality Assurance Commission for 4 degrees (BSc in Computer Science, BSc in Internet of Things, Big Data and Web, MSc in Computer Science, and International MSc in Computer Science), and in the Addressing Committee for Periodic Consultations with the Labor Market
- Awarded publicly by the Rector at the Dacia Arena Stadium as the best graduate student in MSc in Computer Science; prize 1000€

#### **University of Ferrara**

**BSC IN COMPUTER SCIENCE** 

- · Final score: 110/110 with honors
- · Completed 5 months study in Computer Engineering abroad with the University of Murcia

### Work Experience \_\_\_\_\_

#### **Department of Informatics, Systems and Communication (DISCo)**

Assistant Professor, Researcher

Contributing to the ANTHEM (AdvaNced Technologies for Human-centrEd Medicine) project.

#### **Database Systems Group, Free University of Bozen-Bolzano**

RESEARCH ASSISTANT. POSTDOCTORAL RESEARCHER

 Contributed to Research Topic 4 (Artificial Intelligence and Data Science) of Spoke 3 (Green and digital transition for advanced manufacturing technologies) of the Piano Nazionale di Ripresa e Resilienza (PNRR) Interconnected Nord-Est Innovation Ecosystem (iNEST) project

#### Applied Computational Logic and Artificial Intelligence Laboratory, University of Ferrara

**RESEARCH ASSISTANT** 

- Inspired more than 20 students to enter the research laboratory to work on industrial and academic projects related to Data Science and Artificial Intelligence
- · Published more than 10 research papers in international journals and conferences

#### Department of Mathematics and Computer Science, University of Ferrara

**TEACHING ASSISTANT** 

- Accelerated students' success rate for Algorithms and Data Structures (620 students; 155 on average per year), Databases and Laboratory (255 students; 85 on average per year), and Probability Calculus and Statistics (130 students)
- Coordinated 10 theses with keen students receiving excellent feedback

#### **Multiple Companies**

TECHNICAL SALES REPRESENTATIVE

### Projects \_\_\_\_\_

#### Symbolic and Numerical Analysis of Cyber-Physical Systems

RESEARCH ASSISTANT

Founded by the Italian National Group for Scientific Calculus of the Istituto Nazionale di Alta Matematica "Francesco Severi" with 6900€

#### Set-up and Optimization of a Machine Learning Model to Predict Gas Turbine Trip

RESEARCH ASSISTANT

Founded by Siemens Energy Global GmbH & Co. KG with 40000€

### Ferrara, Italv

Nov 2019 - Ongoing

#### Ferrara, Italy

Oct 2019 - Jan 2023

Bologna, Italy Apr 2012 - Jul 2014

Ferrara, Italy

Oct 2017 - Oct 2019

Udine, Italy

Parma Italy

Oct 2019 - Feb 2023

Ferrara, Italy

Oct 2014 - Jul 2017

Milano, Italy

Jul 2024 - Ongoing

Bozen-Bolzano, Italy

Mar 2023 - Jul 2024

### Bolzano, Italy

Modal Geometric Symbolic Learning	Ferrara, Italy
Research Assistant	
Founded by the University of Ferrara with 2650€	
Natural Language Elaboration and Temporal Logic for Text Formalization	Ferrara, Italy
Research Assistant	
Founded by the Italian National Group for Scientific Calculus of the Istituto Nazionale di Alta Matematica "France	esco Severi" with 3000€
Strategic Reasoning and Automated Synthesis of Multi-Agent Systems	Ferrara, Italy
Research Assistant	
Founded by the Italian National Group for Scientific Calculus of the Istituto Nazionale di Alta Matematica "France	esco Severi" with 3000€
Memberships	
Gruppo Nazionale di Calcolo Scientifico	Ferrara, Italy
Member	Nov 2019 - Ongoing
Applied Computational Logic and Artificial Intelligence Laboratory	Ferrara, Italy
Member	Nov 2019 - Ongoing
Formal Verification, Logic, Automata, and Synthesis (OVERLAY) research group	Ferrara, Italy
Member	Nov 2019 - Ongoing
Associazione Dottorandi e Dottori di Ricerca in Italia	Ferrara, Italy
Deputy Coordinator	Oct 2020 - Dec 2022

S	ki	lls

MI One	Structured and unstructured data (time series, images, text, graphs) preparation; Feature engineering and selection; Model
MLOPS	development and evaluation; Version control
Programming	Julia; Python; R; Java; C/C++; 旳EX
Soft skills	Strong communication; Resilience to stress; Leadership; Decision making; Coordination; Commitment; Critical observation

### Honors & Awards\_\_\_\_\_

2021	Finalist, Huawei University Challenge	Remote, Italy
2020	Best Graduate Student in MSc in Computer Science, University of Udine	Udine, Italy

### Extracurricular Activity\_

#### Associazione Dottorandi e Dottori di Ricerca in Italia

Deputy-Coordinator (Ferrara's Unit)

• Led the campaign to reduce PhD students' taxes at the University of Ferrara by 75%

• Organised many cultural dissemination events on Climate Change, Artificial Intelligence and Ethics, and the Evolution of Science with more than 200 attendees

• Managed to obtain a needed 3 months extension of the PhD scholarship at the national level due to COVID-19 related issues

### Languages \_\_\_\_\_

Language	Listening	Reading	Speaking	Writing
Romanian	C2	C2	C2	C2
Italian	C1	C1	C1	C1
English	C1	C1	B2	C1
Spanish	B2	B2	B2	B2
French	A2	A2	A2	A2

### **Publications**

JOURNAL ARTICLES

Ferrara, Italy

Oct 2020 - Dec 2022

- [5] Statistical Rule Extraction for Gas Turbine Trip Prediction
  G. Bechini, E. Losi, L. Manservigi, G. Pagliarini, G. Sciavicco, I. E. Stan, M. Venturini Journal of Engineering for Gas Turbines and Power. 2023
- [4] Fuzzy Halpern and Shoham's interval temporal logics
  W. Conradie, D. Della Monica, E. Muñoz-Velasco, G. Sciavicco, I. E. Stan Fuzzy Sets and Systems pp. 107–124. 2023
- The voice of COVID-19: Breath and cough recording classification with temporal decision trees and random forests
  F. Manzella, G. Pagliarini, G. Sciavicco, I. E. Stan
  Artificial Intelligence in Medicine p. 102486. 2023
- Feature and Language Selection in Temporal Symbolic Regression for Interpretable Air Quality Modelling E. Lucena-Sánchez, G. Sciavicco, I. E. Stan *Algorithms* p. 76. 2021
- On coarser interval temporal logics
  E. Muñoz-Velasco, M. Pelegrín-García, P. Sala, G. Sciavicco, I. E. Stan Artificial Intelligence pp. 1–26. 2019

#### **CONFERENCE PROCEEDINGS & WORKSHOPS**

- [18] (Un)supervised Univariate Feature Extraction and Selection for Dimensional Data P. Cavina, F. Manzella, G. Pagliarini, G. Sciavicco, I. E. Stan Proceedings of the 2nd Italian Conference on Big Data and Data Science (ITADATA), 2023
- [17] A Sound and Complete Tableau System for Fuzzy Halpern and Shoham's Interval Temporal Logic W. Conradie, R. Monego, E. Muñoz-Velasco, G. Sciavicco, I. E. Stan Proceedings of the 30th International Symposium on Temporal Representation and Reasoning (TIME), 2023
- [16] Evolutionary Explainable Rule Extraction from (Modal) Random Forests M. Ghiotti, F. Manzella, G. Pagliarini, G. Sciavicco, I. E. Stan Proceedings of the 26th European Conference on Artificial Intelligence (ECAI), 2023
- [15] Efficient Modal Decision Trees
  F. Manzella, G. Pagliarini, G. Sciavicco, I. E. Stan
  Proceedings of the 32nd International Conference of the Italian Association for Artificial Intelligence (AIXIA), 2023
- [14] Decision Trees with a Modal Flavor
  D. Della Monica, G. Pagliarini, G. Sciavicco, I. E. Stan
  Proceedings of the 21st International Conference of the Italian Association for Artificial Intelligence (AIXIA), 2022
- [13] On Modal Logic Association Rule Mining I. E. Stan, G. Sciavicco, E. Muñoz-Velasco, Giovanni Pagliarini, Mauro Milella, Andrea Paradiso Proceedings of the 23rd Italian Conference on Theoretical Computer Science (ICTCS), 2022
- [12] Neural-Symbolic Temporal Decision Trees for Multivariate Time Series Classification G. Pagliarini, S. Scaboro, G. Serra, G. Sciavicco, I. E. Stan Proceedings of the 29th International Symposium on Temporal Representation and Reasoning (TIME), 2022
- Interval Temporal Random Forests with an Application to COVID-19 Diagnosis
  F. Manzella, G. Pagliarini, G. Sciavicco, I. E. Stan
  Proceedings of the 28th International Symposium on Temporal Representation and Reasoning (TIME), 2021
- Multi-Frame Modal Symbolic Learning
  G. Pagliarini, G. Sciavicco, I. E. Stan
  Proceedings of the 3rd Workshop on Artificial Intelligence and Formal Verification, Logic, Automata, and Synthesis (OVERLAY), 2021
- [9] Time Series Checking with Fuzzy Interval Temporal Logics W. Conradie, D. Della Monica, E. Muñoz-Velasco, G. Sciavicco, I. E. Stan Proceedings of the 21st Italian Conference on Theoretical Computer Science (ICTCS), 2020
- [8] A Note on Ultimately-Periodic Finite Interval Temporal Logic Model Checking D. Della Monica, A. Montanari, G. Sciavicco, I. E. Stan Proceedings of the 2nd Workshop on Artificial Intelligence and Formal Verification, Logic, Automata (OVERLAY), 2020
- [7] Rule Extraction via Dynamic Discretization with an Application to Air Quality Modelling J. Kaminska, E. Lucena-Sánchez, G. Sciavicco, I. E. Stan Proceedings of the 14th International Rule Challenge, 4th Doctoral Consortium, and 6th Industry Track (RULE+RR), 2020
- [6] Symbolic Learning with Interval Temporal Logic: the Case of Regression
  E. Lucena-Sánchez, G. Sciavicco, I. E. Stan
  Proceedings of the 2nd Workshop on Artificial Intelligence and Formal Verification, Logic, Automata (OVERLAY), 2020
- Knowledge Extraction with Interval Temporal Logic Decision Trees
  G. Sciavicco, I. E. Stan
  Proceedings of the 27th International Symposium on Temporal Representation and Reasoning (TIME), 2020
- Interval Temporal Logic Decision Tree Learning
  A. Brunello, G. Sciavicco, I. E. Stan
  Proceedings of the 16th European Conference on Logics in Artificial Intelligence (JELIA), 2019
- [3] Towards Interval Temporal Logic Rule-Based Classification E. Lucena-Sánchez, E. Muñoz-Velasco, G. Sciavicco, I. E. Stan, A. Vaccari

- Towards a General Method for Logical Rule Extraction from Time Series
  G. Sciavicco, I. E. Stan, A. Vaccari
  Proceedings of the 8th International Work-Conference on the Interplay Between Natural and Artificial Computation (IWINAC), 2019
- Implementation of a Tableau-based Satisfiability Checker for HS3
  E. Muñoz-Velasco, G. Sciavicco, I. E. Stan
  Joint Proceedings of the 18th Italian Conference on Theoretical Computer Science (ICTCS) and the 32nd Italian Conference on Computational Logic (CILC), 2017