

Francesco Craighero, MSc

PhD Student on Deep Learning and Explainable AI

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Education

Philosophiae Doctor (Ph.D.), 2019–Present

Department of Informatics, Systems and Communications, University of Milano-Bicocca, Italy
Supervisor: prof. [Marco Antoniotti](#). Co-supervisor: [Alex Graudenzi](#).

Master of Science (M.Sc.), 2016–2018

Dep. of Mathematics, Computer Science and Physics, University of Udine, Italy
Final grade: *Summa cum laude*. International Master Degree in Computer-Science. Five-months stay as Double-Degree student at the Dep. of Informatics Systems, University of Klagenfurt, Austria.
Subject of the thesis: Graph Compression. Supervisor: prof. [Alberto Policriti](#). Co-supervisor: prof. [Stefan Rass](#).

Bachelor of Science (B.Sc.), 2013–2016

Dep. of Mathematics, Computer Science and Physics, University of Udine, Italy
Final grade: *Summa cum laude*. General curriculum in computer science.
Subject of the thesis: Area-proportional Venn Diagrams. Supervisor: prof. [Alberto Policriti](#).

Experience

Research Project (4 months), 2019

Department of Informatics, Systems and Communications, University of Milano-Bicocca, Italy
Four months research project on “Models and algorithms for cancer evolution”.
Supervisor: prof. [Marco Antoniotti](#).

Grants

ISCRA resources (Class C project) 2020–2021

Grant for cloud computational resources for a period of 9 months.
Project title: “Understanding Deep Neural Networks with Activation Pattern Diagrams” (DNNAPD).

Publications

Peer-reviewed journals

- [1] A review of computational strategies for denoising and imputation of single-cell transcriptomic data
Lucrezia Patruno, Davide Maspero, Francesco Craighero, Fabrizio Angaroni, Marco Antoniotti, Alex Graudenzi
Briefings in Bioinformatics (Oct. 2020)
DOI: [10.1093/bib/bbaa222](https://doi.org/10.1093/bib/bbaa222)

Peer-reviewed conference proceedings

- [1] Investigating the Compositional Structure of Deep Neural Networks
Francesco Craighero, Fabrizio Angaroni, Alex Graudenzi, Fabio Stella, Marco Antoniotti
Machine Learning, Optimization, and Data Science, 2020, Springer International Publishing
DOI: [10.1007/978-3-030-64583-0_30](https://doi.org/10.1007/978-3-030-64583-0_30)
- [2] Understanding Deep Learning with Activation Pattern Diagrams
Francesco Craighero, Alex Graudenzi, Fabrizio Angaroni, Fabio Stella, Marco Antoniotti
Proceedings of the Italian Workshop on Explainable Artificial Intelligence co-located with 19th International Conference of the Italian Association for Artificial Intelligence, XAI.it@AlxIA 2020, Online Event, November 25-26, 2020, CEUR-WS.org
URL: <http://ceur-ws.org/Vol-2742/short6.pdf>

Languages

Mother tongue **Italian**
Other languages¹

English²
German³

| Understanding | | | | Speaking | | | | Writing | |
|---------------|-------------|---------|-------------|-------------|-------------|------------|-------------|---------|-------------|
| Listening | | Reading | | Interaction | | Production | | | |
| B2 | Independent | B2 | Independent | B2 | Independent | B2 | Independent | B2 | Independent |
| A1 | Basic | A1 | Basic | A1 | Basic | A1 | Basic | A1 | Basic |

¹ *Common European Framework of Reference for Languages (CEFR)*

² *First Certificate in English (2013)*

³ *Course at the University of Klagenfurt*