

# Lucrezia Patruno, MSc

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## Education

**Ph.D. Candidate in Computer Science (expected Jan 2023),** 2019–Present

Department of Informatics, Systems and Communications, University of Milano-Bicocca, Italy

I am working on an interdisciplinary project called “Single cell cancer evolution in the clinic” (CRUK/AIRC Accelerator Award #22790), where I am learning to apply and develop computational tools to analyse and integrate single-cell multi-omics data.

**Master’s degree in Computer science,** 2017–2019

Department of Informatics, Systems and Communications, University of Milano-Bicocca, Italy

Final grade: 110/110 with honors.

During my Master’s degree I have acquired knowledge in Machine Learning, Data Analysis, Image Processing and Bioinformatics. For my thesis I have worked on a review about existing machine learning techniques to remove noise from single cell sequencing data.

**Bachelor’s degree in Computer Science,** 2014–2017

Department of Informatics, Systems and Communications, University of Milano-Bicocca, Italy

Final grade: 110/110 with honors.

During my Bachelor’s degree I have acquired fundamental Computer Science skills: I have gained knowledge in programming, algorithms and data structures and Image Processing. For my thesis I worked on a Cytoscape application to visualize cancer progression models.

## Experience

**Google Summer of Code 2018**

May 2018 –  
August 2018

I participated in GSoC2018, developing cyTRON/JS, a web application for the inference and visualization of cancer progression models. The project is accessible at the following link: <https://bimib.disco.unimib.it/cytronjs/welcome> and the code can be found on GitHub at the following repository: <https://github.com/BIMIB-DISCO/cyTRON>.

## 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)  
URL: <https://doi.org/10.1093/bib/bbaa222>

\*Equal Contribution

### Peer-reviewed conference proceedings

- [1] A closed-loop optimization framework for personalized cancer therapy design  
Fabrizio Angaroni, Mattia Pennati, Lucrezia Patruno, Davide Maspero, Marco Antoniotti, Alex Graudenzi  
*2020 IEEE Conference on Computational Intelligence in Bioinformatics and Computational Biology (CIBCB)*, 2020  
DOI: [10.1109/CIBCB48159.2020.9277647](https://doi.org/10.1109/CIBCB48159.2020.9277647)
- [2] cyTRON and cyTRON/JS: Two Cytoscape-Based Applications for the Inference of Cancer Evolution Models  
Lucrezia Patruno, Edoardo Galimberti, Daniele Ramazzotti, Giulio Caravagna, Luca De Sano, Marco Antoniotti, Alex Graudenzi  
*Computational Intelligence Methods for Bioinformatics and Biostatistics*, 2020, Springer International Publishing  
ISBN: 978-3-030-63061-4

## Conferences

**CIBB 2019:** Computational Intelligence methods for Bioinformatics and Biostatistics 6<sup>th</sup> September 2019

**COMBINE 2018:** Computational Modeling in Biology Network 12<sup>th</sup> October 2018

During these two conferences I presented the web application developed within the Google Summer of Code 2018.

## Academic Activities

**CDAC 2021 Conference Organizer** May 2021

Component of the local organization of School of Cancer Development and Complexity (CDAC) 2021.