

Desiree MANICARDI

PhD candidate in “Computer Science and Computational Mathematics”

Varese, Italy

✉ desiree.manicardi@gmail.com

🌐 dmanicardi.github.io

in [desiree-manicardi-25a654168](https://www.linkedin.com/in/desiree-manicardi-25a654168)

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Current position

from 11/2020 **PhD candidate in “Computer Science and Computational Mathematics”, University of Insubria, Varese, Italy**

- I focus my research on formal models for biological systems. I started modelling some interesting biological systems such as the Heart system via CospanSpan(Graph), which is a compositional model having mathematical rigor and tailored for modelling large systems. Then, I have been working on a model to formalise a process algebra. It is user-friendly, easy to implement, and tailored for modelling biochemical reaction networks.
- Attended courses:
 - *Advanced Topics in Cryptography;*
 - *Bioinformatics;*
 - *Computational Cognitive Modeling;*
 - *Early design of Internet of Things networks towards real deployment;*
 - *Graph Labelings, Colorings and Their Applications;*
 - *Modeling and Verifying Hybrid Systems;*
 - *Systems, Modelling & Simulations;*
 - *Technologies for processing streaming data pipeline.*
- Camp: “Innovation Camp for PhD Students – Deep Dive Into Innovation and Execution” (03-05/2021).
- Public Ph.D. Scholarship for the best 6 Ph.D. applications for the XXXVI Ph.D. Cycle at the “Computer Science and Computational Science” Ph.D. course, Theoretical and Applied Sciences Department of University of Insubria, October 2020.

Research Interests

- Categories;
- Probability;
- Timing formalisms;
- Formalisms for biological systems.

Education

from 12/2016 to 07/2018 **Master Degree in Computer Science**, *University of Insubria*, Varese, Italy, 110/110 *cum laude*

- Thesis (in Italian): “Modellazione di un Pacemaker Dual Chamber in Span(Graph)”.
- Main courses: Computer Engineering, Programming in Java and C, Models of Computation, Models for Biological Systems, Privacy and Security, Artificial Intelligence.
- Six projects.
- Two scholarships.

from 09/2013 to 12/2016 **Bachelor Degree in Computer Science**, *University of Insubria*, Varese, Italy, 101/110

- Thesis (in Italian): “Progettazione e sviluppo di un’applicazione per il filtraggio di messaggi di Twitter”.
- Main courses: Database, Privacy and Security, Coding theory, Programming in Java, Software Design, Web applications.
- Seven projects.
- One scholarship.

Experience

Computer Science

from 11/2017 to 05/2018 **Traineeship**, *University of Insubria*, Como, Italy
Analysis of the Span-Cospan(Graph), focusing on timing.

from 02/2016 to 09/2016 **Traineeship**, *University of Insubria*, Varese, Italy
Design and development of a web application aimed at filtering tweets using Twitter API.

Teaching activities - Didactic support (in Italian)

A.Y. 2021-22 **Tutor for the course “Programmazione”**, *University of Insubria*, Como, Italy

A.Y. 2020-21 **Adjunct Professor for the course “Software Python”**, *University of Turin*, Turin, Italy

In Italian: *Professoressa Universitaria a Contratto*.

See the program [here](#).

A.Y. 2020-21 **Assistant for the course “Programmazione”**, *University of Insubria*, Como, Italy

S.Y. 2020-21 **Tutor for the course “Le Basi della Scienza dei Dati”**, *“I Lincei per la Scuola” Foundation*, Milan, Italy

A.Y. 2019-20 **Assistant for the course “Le Basi della Scienza dei Dati”**, *University of Milan-Bicocca*, Milan, Italy

S.Y. 2012-13 **Tutor for the course “Nonni su Internet”**, *Istituto Tecnico Economico Enrico Tosi*, Busto Arsizio, Italy

Miscellaneous

from 12/2018 **Administrative employee**, *Comune di Olgiate Olona*, Olgiate Olona, Italy
to 12/2019

from 07/2012 **Traineeship**, *Comune di Olgiate Olona*, Olgiate Olona, Italy
to 08/2012

Languages

Italian Native

English Upper intermediate

First Certificate in English (CEFR Level B2)

Certifications

Computer **Google digital training - Fondamenti di marketing digitale**, *Google*, 06/2020

Science **Técnicas Cuantitativas y Cualitativas para la Investigación**, *EdX, Universidad Politécnica de Valencia*, 01/2019

Data Access in C# and .NET Core, *EdX, Microsoft*, 09/2018

Asynchronous Programming with Javascript, *EdX, Microsoft*, 08/2018

Introduction to Python: Absolute Beginner, *EdX, Microsoft*, 08/2018

Architetture orientate ai servizi, *University of Insubria*, 06/2018

Sistemi organizzativi a rete, *University of Insubria*, 06/2018

Mathematics **IGCSE Mathematics Extended**, *University of Cambridge*, 06/2013

IGCSE Mathematics Core, *University of Cambridge*, 06/2012

Computer skills

Strenghts

Programming Java, Python

Database SQL, NoSQL

Basic-Intermediate

Programming C, C++, C#, API REST

Environment Eclipse, Node.js

Web HTML, PHP, CSS, JavaScript,
JSON

Tools pgAdmin, Node-RED

Publications

- [1] A. Gianola, S. Kasangian, D. Manicardi, N. Sabadini, and S. Tini. Compositional modeling of biological systems in `cospanspan(graph)`. In *CEUR Workshop Proceedings*, volume 2756, pages 61–66. CEUR-WS, 2020.
- [2] Alessandro Gianola, Stefano Kasangian, Desiree Manicardi, Nicoletta Sabadini, Filippo Schiavio, and Simone Tini. `Cospanspan(graph)`: A compositional description of the heart system. *FUNDAMENTA INFORMATICA*, 171:221–237, 2019.
- [3] Ruggero Lanotte, Desiree Manicardi, and Simone Tini. Step-by-step robustness for biochemical networks. 2023.

Extra

- Registered in the *Albo dei soggetti accreditati*, University of Milan-Bicocca (2020 – 2021)

Interests

- Genealogy Tree I found the information of an ancestor of mine born in 1768.
- Cooking I have been cooking as much time as possible since I was in middle school.
- Gardening I have had a small garden since 2019.