Stefano **Mangini**

PhD Student · Theoretical Physics

Physics Department, University of Pavia, Via A. Bassi 6, 27100, Pavia, Italy

✉ stefano.mangini01@universitadipavia.it | ⌨ stfnmangini | 🔗 stfnmangini | 🆔 orcid

"[...still looking for an outstanding quote...]"

Introduction

I am a PhD student in Theoretical Physics at the University of Pavia, under the supervision of Prof. Chiara Macchiavello. My research path is focused on Quantum Computation, with applications to the field of Quantum Artificial Intellicence. I am very interested in the study of Quantum Technologies, and I wish to play an active role in their development.

Interests: Quantum Computing, Artificial Intelligence, Computational Complexity

Anagraphics

Nationality	Italian
Personal Address	Via Roma 25A, Putignano, 70017, Italy
Birth date	20 January 1996
Personal Email	✉ mangini.stfn@gmail.com

Education

University of Pavia — *Pavia, Italy*
PhD in Theoretical Physics — *Nov. 2019 - Ongoing*
- Currently researching on Quantum Computation and applications to Quantum Machine Learning.

University of Trieste — *Trieste, Italy*
MSc in Theoretical Phisics — *Oct. 2017 - Oct. 2019*
- Final Grade: 110/110 cum laude.
- Thesis: Continuous Quantum Neuron. *Supervisors: Prof. Fabio Benatti, Prof. Stefano Mancini*
  Study a possible model for a Continuous Optical Quantum Neuron. In particular, starting from an optical circuit capable of implementing the dynamics of a Perceptron, various encoding for classical data into quantum states are studied. Ideal and real case with states comprising an energy bound are taken into account. Examples of entangled and superposition states are also considered.

University of Trieste — *Trieste, Italy*
BSc in Phisics — *Oct. 2014 - Jul. 2017*
- Final Grade: 110/110 cum laude.
- Thesis: The Ehrenfest model and the dynamics of neutral mutations in evolutionary genetics. *Supervisor: Prof. Edoardo Milotti*
  Study of the statistical mechanical model first introduced by Ehrenfest, applied to the description of the dynamics of a neutral mutation in a simulation of a group of cells. The research involved both theoretical aspects concerning the study of the statistical and biophysical model, and computational ones related to the programming of the simulation.

High School "Majorana-Laterza" — *Putignano, Italy*
Scientific High School — *Sep. 2019 - Jul. 2014*
- Final Grade: 110/110.

Skills

Quantum Programming	Qiskit, PennyLane
Programming	Python, C/C++, Fortran, Bash
Software	Mathematica, Matlab, MS Office, Latex
Language	Italian (*mother toungue*), English (*very fluent*)

Experience

University of Trieste — *Trieste, Italy*
Stage — *Feb. 2019 - Apr. 2019*
- Topic: Continuous Variable quantum computation.
- Acquired the necessary skills and knowledge for a quantum generalization of a Perceptron, as discussed in my Master Thesis.

National Institute for Nuclear Physics (INFN) *Trieste, Italy*
<small>INTERNSHIP</small> *Feb. 2017 - Mar. 2017*
- Topic: Neural Networks Simulation in Mathematica.
- Deepened my knowledge of Neural Networks and Wolfram's Mathematica, by programming, implementing and optimizing a neural network algorithm (Neural Relax) into Mathematica.

Publications

| 2020 | **Continuous variable quantum perceptron** F. Benatti, S. Mancini and S. Mangini, *International Journal of Quantum Information*, 1941009, DOI: 10.1142/S0219749919410090 | *IJQI, arXiv* |

Conferences

Hackathon on CEREBELLUM MODELLING *Pavia, Italy*
<small>ATTENDEE</small> *Jan. 2020*
- I took part in an Hackathon on computational neuroscience where I learnt about the state of the art of this discipline, and I followed some hands-on tutorials on cerebellum modelling using different programming libraries.

Extracurricular Activity

Student Representative *Trieste*
<small>DEPARTMENT OF PHYSICS</small> *2019*
- Student Representative for Master of Science in Physics in the University of Trieste.

Divulgation Events *Trieste*
<small>ORGANIZATION AND MEDIA</small> *2014-2019*
- *Caffè dei Quanti:* Helped with organization, media communication, and advertisements (photos and short videos of the events), of a series of scientifi divulgation events concieved by Prof. Angelo Bassi.
- *AISF:* Vice President of the local commitee of the Italian Association of Physics Student (AISF). Organization and participation in several scientific divulgation events.
- *Mini-Maker Faire:* As a volunteer, helped with organization and acted as interpreter for english speaking Makers to italian visitors.

Entrepreneurship *Trieste*
<small>CONTAMINATION LAB</small> *2019*
- Attended a School for promoting entrepreneurship and soft skills among students.

High School Exchange Program *Australia*
<small>INTERCULTURA</small> *Jun. 2012 - Aug. 2012*
- Spent two month in Australia hosted by a local family, as part of an high school exchange program.