

# Davide Rolino - Curriculum Vitae

Ph.D. Student in Theoretical Physics

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🌐 [d4bd](#)

🌐 [davide-rolino](#)



## Personal Profile

I am a **young researcher** in the field of **quantum foundations**. In my **Ph.D.**, I am using the **framework of Operational Probabilistic Theories** to **study** and try to **comprehend quantum mechanics** and **tackle the deepest question of modern physics**. In addition to foundational phenomena I am also **interested** in the fields of **quantum computation and cryptography**, **cellular automata** and that of **causal inference**.

## Professional experience and education

Oct 2022 **Ph.D. in Physics**

Present *University of Pavia (IT)*

- Advisors: **Prof. Paolo Perinotti** and **Dr. Alessandro Tosini**
- Specialization in **Theoretical Physics**, in particular **Foundations of Quantum Mechanics**
- Working with the **framework of Operational Probabilistic Theories**
- Studying classical theories with quantum features

Oct 2020 **Master degree in Physical Sciences**

Sept 2022 *Summa cum Laude, University of Pavia (IT)*

- M.Sc. thesis' title: **"A classical theory with incompatible measurements"**
- Supervisors: **Prof. Paolo Perinotti**, **Dr. Alessandro Tosini** and **Dr. Marco Erba**
- Definition and characterization of the class of **Minimal Operational Probabilistic Theories**
- Construction of **Minimal Bi-local Classical Theory**: a classical theory exhibiting incompatible instruments

Oct 2017 **Bachelor Degree in Physics**

Sept 2020 *Summa cum Laude, University of Pavia (IT)*

## Publications

### Pre-prints

- Erba, Marco, Perinotti, Paolo, Rolino, Davide, and Tosini, Alessandro. *Measurement incompatibility is strictly stronger than disturbance*. 2023. arXiv: [2305.16931](https://arxiv.org/abs/2305.16931) [quant-ph]

## Events and presentations

### Posters

**24 - 28 Jul 2023** [Theory of Quantum Computation, Communication and Cryptography \(TQC\) 2023](#)  
*Aveiro (PT)*  
Poster: [Disturbance does not imply complementarity](#)

### Short visits

**02 - 05 Jul 2023** [International Centre for Theory of Quantum Technologies \(ICTQT\)](#)  
*Uniwersytet Gdański, Gdańsk (PL)*  
Seminar: [Measurement incompatibility vs Irreversibility](#)

## Attended schools and workshops

### Schools

**7 - 19 Aug 2023** [Picturing Quantum Weirdness](#)  
*University of Gdańsk, Gdańsk (PL)*

### Workshops

**17 - 21 Apr 2023** [Causal Inference & Quantum Foundations Workshop](#)  
*Perimeter Institute for Theoretical Physics, Waterloo (CA)*

## Honors and awards

**2017 - 2020** Winner for 4 consecutive years of the scholarship offered by [Vitale Barberis Canonico S.p.A](#)

## Memberships

**Mar 2023 Present** INFN, Gruppo IV, Sezione di Pavia, via Bassi 6, 27100 Pavia, Italy

## Languages

**Italian** Native

**English** Professional Working Proficiency - First Certificate (FCE) B2 (2016)

## Computer related Knowledge

**Program-  
ming  
languages** Bash, C/C++, Python (PyTorch, TensorFlow and Keras libraries),  $\text{T}_{\text{E}}\text{X}$ ,  $\text{L}_{\text{A}}\text{T}_{\text{E}}\text{X}$ , SQL

**Software** Office suite, AutoCAD, Krita, Photoshop, Blender, Canva

**General  
knowledge** Machine learning techniques (FNNs, CNNs, RNNs, MPNNs, GCNs, GANs, Autoencoders, PINNs)

## Extracurricular activities

- Five years of drama class (2012 - 2017). It improved my public speaking skills
- Participated at several [Coding Gym](#) events to improve my technical and communicating skills in the area of programming

## Personal interests



Coding, also by integrating it with hardware (Arduino and Raspberry Pi)



Sports, mainly working out and skiing



Reading



Chess

## References

### Prof. Paolo Perinotti



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### Dr. Alessandro Tosini



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**Dr. Marco Erba**



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*I, Davide Rolino, born in Biella (BI) on 03/09/1998, resident in via Iside Viana n.5/G, Candelo (BI), declare under penalty of perjury subject to all applicable laws (art.76 D.P.R. 28/12/2000 n.445), that the information provided is true and correct to the best of my knowledge, information and belief. This document is authorized to personal data treatment, according to Art. 7 of Legislative Decree n. 196/2003.*

Pavia, 23/08/2023

Davide Rolino