

# TOMMASO BOCCATO

ICT Engineer

Computer  
Vision



Deep  
Learn.



Network  
Science



Neural  
Networks



Quantum  
Information



## WHO AM I?

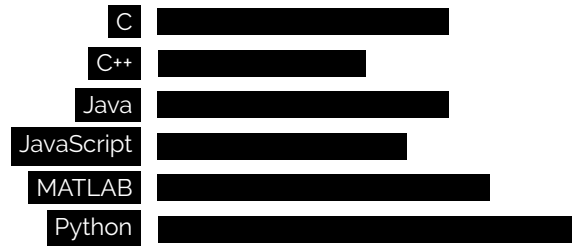
**Curiosity** and **passion** constitute my lifeblood.

Consequently, study, work, but also the everyday life become opportunities to learn and challenges to improve, independently as well as part of a team. I love to collaborate and compete with great minds in order to achieve my final objective: to combine **precision** and **creativity** for contributing to the birth of great things.

## PROGRAMMING SKILLS

CSS / HTML / LaTeX / SQL

Apache Spark / Lightning / NetworkX /  
NLTK / OpenCV / PyTorch / Sigma js /  
Weights & Biases



## EXPERIENCE

2021  
9 mo.

### Computational Modeling of Numerosity Perception

Università degli Studi di Padova

The awarded research grant allowed a collaboration with the Computational Cognitive Neuroscience Lab (CCNL). Research activities, at the frontiers between deep learning, neuroscience and cognitive science, focused on the computational mechanisms underlying numerosity perception and complex physical interactions.

Deep Learning / Computational Neuroscience / Cognitive Science

2020  
6 mo.

### Erasmus+ Mobility for Traineeships

Technische Universität Wien

The traineeship project, developed at the Vision for Robotics (V4R) laboratory, focused on extending the operational life of robotic agents through the development of lifelong learning capabilities.

Machine Learning / Computer Vision / Robotics

## EDUCATION

2021 **National Ph.D. in Artificial Intelligence**

→202x CNR/PhD-AI.it Consortium

"Health and Life Sciences" Area

2018 **M.Sc. in ICT for Internet and Multimedia**

→2020 Università degli Studi di Padova

110L/110

English Master of Science /  
"Cybersystems" Curriculum

2015 **B.Sc. in Information Engineering**

→2018 Università degli Studi di Padova

109/110

2010 **Secondary School Diploma**

→2015 Liceo Scientifico Statale "P. Paleocapa"

100/100

"Applied Sciences" Curriculum

## FURTHER EDUCATION PT. 1

2017 **Android Basics Nanodegree Program**

Udacity

The nanodegree program, built in collaboration with Google, is available online and provides the real-world skills needed to start building apps and approach the professional Android Development.

2020 **Programming Design Systems**

NYU Tisch School of the Arts

The course, available online, focuses on the intersection between graphic design and code. Class time is divided between design topics like color, grid systems, and typography, and more computational topics like randomization, repetition, transformation and generative form.

## TEACHING

2022 →2023  
32h  
**"Fisica Medica" Module**  
Università degli Studi di Roma Tor Vergata  
The integrative educational activities have been provided within the degree course in "Ortottica ed Assistenza Oftalmologica".

## FURTHER EDUCATION PT. 2

2022 **AI & Society Summer School**  
Università di Pisa  
Deep Learning / XAI / AI Ethics

2022 **PhD AI School (Healthcare and Life sciences area)**  
Università Campus Bio-Medico  
Deep Learning / Medical Imaging / AI Ethics

## PUBLICATIONS / CONFERENCES

11 M. Inglese, M. Ferrante, A. Duggento, T. Boccato and N. Toschi, **Spatiotemporal Learning of Dynamic Positron Emission Tomography Data Improves Diagnostic Accuracy in Breast Cancer**. IEEE Transactions on Radiation and Plasma Medical Sciences. 2023. / 10 T. Boccato, M. Ferrante, A. Duggento and N. Toschi, **Beyond Multilayer Perceptrons: Investigating Complex Topologies in Neural Networks**. arXiv. 2023. / 9 M. Ferrante, T. Boccato and N. Toschi, **Semantic Brain Decoding: from fMRI to Conceptually Similar Image Reconstruction of Visual Stimuli**. arXiv. 2022. / 8 T. Boccato, M. Ferrante, A. Duggento and N. Toschi, **Converting Biologically Plausible Networks into Trainable Neural Architectures**. Workshop on Artificial Intelligence for Healthcare (HC@AIXIA, 1st edition). 2022. / 7 M. Ferrante, T. Boccato and N. Toschi, **BayesNetCNN: Incorporating Uncertainty in Neural Networks for Image-Based Classification Tasks**. arXiv. 2022. / 6 M. Ferrante, T. Boccato, S. Spasov, A. Duggento and N. Toschi, **VAESim: A Probabilistic Approach for Self-Supervised Prototype Discovery**. arXiv. 2022. / 5 M. Ferrante, T. Boccato, S. Spasov, A. Duggento and N. Toschi, **Contrastive Learning for Unsupervised Medical Image Clustering and Reconstruction**. arXiv. 2022. / 4 T. Boccato, A. Duggento and N. Toschi, **Biologically Inspired Artificial Neural Network for Higher Performance and Robustness**. 108° Congresso Nazionale Società Italiana di Fisica (SIF). 2022. / 3 T. Boccato, M. Ferrante, A. Duggento and N. Toschi, **4Ward: a Relayering Strategy for Efficient Training of Arbitrarily Complex Directed Acyclic Graphs**. arXiv. 2022. / 2 T. Boccato, A. Testolin, and M. Zorzi, **Learning Numerosity Representations with Transformers: Number Generation Tasks and Out-of-Distribution Generalization**. Entropy. 2021. / 1 T. Boccato, T. Paten, M. Vincze, and S. Ghidoni, **In the Depths of Hyponymy: A Step Towards Lifelong Learning**. In Proceedings of the 16<sup>th</sup> International Conference on Autonomic and Autonomous Systems. 2020.


## AWARDS


2022 **Hackathon Best Performance**  
AI & Health 2022 Summer School (UCBM)


2021 **Best Paper Award**  
IARIA


2017 **"Mille e una lode" Scholarship**  
Università degli Studi di Padova


## CONTACT

 Italian

 Rovigo, 22/01/1996

 Italian (mother tongue), English (fluent)

 [tommaso.boccato@uniroma2.it](mailto:tommaso.boccato@uniroma2.it)

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## HOBBIES

I played the piano, the organ and the guitar. I used to play soccer in a local team during the high school years. I love to play table soccer and darts. I am passionate about graphic design and I strongly believe in the power of data visualization. I enjoy spending time surrounded by nature. I love to visit new cities and discover new cultures.