

# CURRICULUM VITAE

## Fabio Brau

### Bio

Fabio Brau is a Post Doctoral Researcher at the Real-Time Systems Laboratory of Scuola Superiore Sant'Anna in Pisa. He graduated in Mathematics in 2019 at the University of Pisa with a curriculum in Numerical Analysis. In 2024, he received a Ph.D. in Emerging Digital Technologies with a thesis titled "Methods for Certifiable Robustness of Deep Neural Networks". His current research focuses on advancing the safety and reliability of Deep Neural Networks (DNNs) and Machine Learning Algorithms, particularly for safety-critical systems.

## Education and Training

- From October 2020 to March 2024, Ph.D. in Emerging Digital Technologies, Scuola Superiore Sant'Anna, Department of Excellence in Robotics & AI, EQF – 8, Thesis: Methods for Certifiable Robustness in Deep Neural Networks , Graduated cum laude
- From September 2016 to February 2019, Master's Degree in Mathematics (Curriculum in Numerical Analysis and Applied Mathematics), University of Pisa, EQF – 7, 110/110 L
- From September 2017 to March 2018, Master M1 Acsyon in Applied Mathematics, Université de Limoges, Description: Methods and software (AMPL, Maple, Matlab, Sage, FreeFem++) to solve optimization problems, data fitting, and stability of dynamic systems.
- From September 2011 to December 2015, Bachelor's Degree in Mathematics (Curriculum in Foundations of Mathematics), University of Pisa, EQF – 6, 96/110

## Work & Research Experience

- From January 2024, Postdoctoral Research, Sant'Anna University, Pisa (PI), Italy, Description: Robust and Efficient Vision Perception models for safety-critical embedded systems.
- From March 2023 to August 2023, Visiting Ph.D. Student, Institute of Science and Technologies of Austria, Klosterneuburg (AT), under the supervision of Prof. Christoph Lampert. Description: Trustworthy and safe AI models for Certified Robust Classification.

- From January 2020 to September 2020, Research Fellow at Sant'Anna University, Pisa (PI), Italy. Description: Artificial Intelligence for Cloud-NFV Data Center Operations in collaboration with Vodafone Italia S.p.A.
- From July 2019 to December 2019, Data Scientist, Jakala, Milano (MI). Description: Neural Network Models for Recommender Systems, PCA and clustering for data-driven analysis.

## Personal Skills

### Languages

Italian: Mother tongue

English: Listening (B2), Reading (B2), Speaking (B2), Writing (B2)

### Digital Competences

Programming Languages: Python (Pandas, PyTorch, Jupyter, PySpark), Fortran (LAPACK, OpenMP), Bash, C, C++, Haskell

Software Applications: Matlab, AMPL, Sage, LaTeX, Git, Linux

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