

# FILIPPO BOTTI

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## SUMMARY

Motivated student with a strong commitment to academic excellence and a deep interest in exploring novel architectures. Background focused on teaching, research, and the development of practical, market-oriented solutions.

My main area of research is deep learning, with a significant focus on generative AI, particularly style transfer and the design of efficient architectures optimized for speed and resource usage. Through these years, I gained extensive experience with PyTorch, designing model architectures, and conducting performance analysis, specifically concentrating on emerging RNNs like Mamba, RWKV, and xLSTM. These efforts reflect my broader goal of advancing scalable and sustainable AI systems, a field that I believe can benefit everyone.

## EDUCATION

- **PhD student in Information Technology** 2023 - Present (Exp. Grad. October 2026)  
Università degli studi di Parma  
Parma, Italy  
Research focus: Deep Learning, Generative AI, Style Transfer, Efficient Models  
Supervisor: Prof. Andrea Prati
- **DeepLearn Summer School** July 2024  
University of Maya  
Porto, Portugal  
Description: Research training event with a global scope aiming at updating participants on the most recent advances in the critical and fast developing area of deep learning
- **Computer Engineering M.Sc.** 2021 - 2023  
Università degli studi di Parma  
Parma, Italy  
Graduated with 110/110 cum laude  
Thesis: "Unsupervised subject segmentation for accurate image-to-image translation"
- **Computer Engineering B.Sc.** 2017 - 2021  
Università degli studi di Parma  
Parma, Italy  
Graduated with 110/110 cum laude  
Thesis: "Attention transfer for Cycle Consistent Generative Adversarial Networks"
- **Technical High School Diploma (ITIS) "Electrical Engineering and Automation"** 2012 - 2017  
Istituto Tecnico Industriale Statale "Leonardo da Vinci"  
Parma, Italy  
Graduated with 100/100

## EXPERIENCE

- **Member of the IT and statistics committee** July 2023 - Present  
Associazione Italiana Arbitri (AIA)  
Italy  
Development of web platforms and mobile applications for the internal management of associated referees.
- **Mobile developer** April 2021 - March 2022  
Net4Market - CSAMed  
Cremona, Italy  
Development of the mobile application for "Network Imprese", a network for small and medium-sized Italian businesses.

## TEACHING

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- **Software Lifecycle Management** 2024  
Forma Futuro  
Parma, Italy  
Software Engineering basic course for working students.
- **Introduction to Python programming** 2024  
Fondazione Alma Mater  
Bologna, Italy  
Python course for working students.
- **Tutor for "Object Oriented Programming"** 2023 - Present  
Università degli studi di Parma  
Parma, Italy  
Docente: Prof. Luca Veltri  
Exam practice and tutoring for first-year students (C++)
- **Tutor for "Fundamentals of computer science"** 2022 - 2023/2025 - Present  
Università degli studi di Parma  
Parma, Italy  
Docente: Prof. Michele Tomaiuolo/Prof. Massimo Bertozzi  
Tutoring for first-year students (Python and C++)

## PUBBLICAZIONI

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- **SISMA: Semantic Face Image Synthesis with Mamba** 2025  
Filippo Botti, Alex Ergasti, Tomaso Fontanini, Claudio Ferrari, Massimo Bertozzi e Andrea Prati  
International Conference on Image Analysis and Processing (ICIAP)
- **U-shape mamba: State space model for faster diffusion** 2025  
Alex Ergasti, Filippo Botti, Tomaso Fontanini, Claudio Ferrari, Massimo Bertozzi e Andrea Prati  
Proceedings of the Computer Vision and Pattern Recognition Conference (Workshop)
- **Mamba-st: State space model for efficient style transfer** 2025  
Filippo Botti, Alex Ergasti, Leonardo Rossi, Tomaso Fontanini, Claudio Ferrari,  
Massimo Bertozzi e Andrea Prati  
2025 IEEE/CVF Winter Conference on Applications of Computer Vision (WACV)
- **Masked Style Transfer for Source-Coherent Image-to-Image Translation** 2024  
Filippo Botti, Tomaso Fontanini, Massimo Bertozzi e Andrea Prati  
Applied Sciences 14 (17)
- **Avoiding shortcuts in unpaired image-to-image translation** 2022  
Tomaso Fontanini, Filippo Botti, Massimo Bertozzi e Andrea Prati  
International Conference on Image Analysis and Processing (ICIAP)

## SKILLS

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- **Research and Development**  
Ability to conduct research in the field of deep learning and artificial intelligence, both from an academic and industrial perspective.
- **Software Engineering**  
Experience in software development, testing, and release, with a greater focus on mobile and video games.
- **Languages & Frameworks**  
Python, C, C++, Pytorch, Flutter, React Native, C#, Java, SQL, Angular
- **Tools & Others**  
Git, UNIX, Latex, Unity, Godot