

# Marco Domenico Buttiglione

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## PROFILE

PhD student in Information Technology with expertise in computer graphics, soft-body simulation, game development, and XR applied to medical simulation. He is currently developing immersive VR-based simulation environments featuring realistic tissue deformation in close collaboration with healthcare professionals.

## SKILLS

### PROG. LANGUAGES

C# • Python • JavaScript  
C++ • TypeScript • HTML/CSS

### TECHNOLOGIES

ReactJS • Unity • TensorFlow  
Babylon.js • Vulkan • OpenGL

## LANGUAGES

Italian (native)  
English (proficient)

## PROJECTS

### Thoraco VR

Low-cost VR simulation environment for lung surgery training developed in collaboration with medical professionals.

### Wildcard 2.0

VR app with eye-tracking for attention training in NDD patients. UAHCI Best Paper Award.

### Paradox!

2D puzzle platformer with innovative time travel mechanics. Featured on Steam with demo available.

## LINKS

Github:// **MarcoButtiglione**  
Steam:// **Paradox!**  
YouTube:// **Wildcard 2.0**  
YouTube:// **Thoraco VR**

## EDUCATION

### POLITECNICO DI MILANO

PHD IN INFORMATION TECHNOLOGY

Sep 2024 – Present | Milan, Italy

- Specialized curriculum focused on computer graphics, soft-body simulation, and VR/AR technologies. Advisor: Prof. Marco Gribaudo.

### POLITECNICO DI MILANO

MSC IN COMPUTER SCIENCE AND ENGINEERING

Oct 2021 – Apr 2024 | Milan, Italy

- Thesis: *Soft-Body Simulation for Virtual Reality-Based Thoracoscopic Training*. Supervisor: Prof. Marco Gribaudo. Final grade: 110/110 cum laude.

### POLITECNICO DI BARI

BSC IN COMPUTER SCIENCE AND AUTOMATION ENGINEERING

Oct 2017 – Feb 2021 | Bari, Italy

- Thesis: *Cloud solutions supporting an innovative platform for multimedia content distribution*. Supervisor: Prof. Tommaso Di Noia. Final grade: 110/110 cum laude.

## EXPERIENCE

### POLITECNICO DI MILANO | TEACHING ASSISTANT

Sep 2024 – Present | Milan, Italy

- Computer Graphics* (Vulkan, Master's degree course in English).
- Laboratorio di Rappresentazione Digitale* (Bachelor's degree course, 3D CAD modeling for fashion accessories).

### REWIND STUDIOS | GAME DEVELOPER

Oct 2022 – Present | Milan, Italy

- Directing a heterogeneous indie team of 7 people for the development of *Paradox!*, a 2D puzzle platformer, overseeing game design and mechanics.
- Providing gamification consulting services for external companies, developing interactive applications and video games.

### WIDEVERSE | FRONTEND WEB DEVELOPER

Jan 2021 – Sep 2021 | Bari, Italy

- Developed a CRM portal using ReactJS for the civil registry office of the Italian Public Administration.
- Built a 3D web configurator using Babylon.js enabling interactive customization of outdoor blinds.

## PUBLICATIONS

- [1] M. D. Buttiglione, F. Guerrera, P. Piazzolla, G. Colombo, E. Ruffini, and M. Gribaudo. Collaborative virtual reality framework for surgical training and simulation. page 661 – 667. European Council for Modelling and Simulation, 2025.
- [2] A. Patti, F. Vona, A. Barberio, M. D. Buttiglione, I. Crusco, M. Mores, and F. Garzotto. Training attention skills in individuals with neurodevelopmental disorders using virtual reality and eye-tracking technology. In *International Conference on Human-Computer Interaction*, pages 368–381. Springer, 2024.