

VIVIANA PENTANGELO

 [vipenti.github.io](https://github.com/vipenti)

 vpentangelo@unisa.it  linkedin.com/in/vivianapentangelo/  github.com/vipenti

I am a Ph.D. Student in Computer Science at the University of Salerno. My research primarily focuses on Metaverse Engineering and the design, development, and evaluation of virtual environments. On one side, I explore how metaverse technologies can be effectively applied across different domains, with a specific focus on Education and E-Health. On the other side, my work investigates how Artificial Intelligence can be leveraged to design and exploit these virtual spaces, with a strong emphasis on Human-AI Interaction, co-creation, and AI-driven techniques for 3D environment generation.

Personal Information

- **Date of Birth:** May 26, 2000
- **Current Location:** Salerno (SA) - Italy
- **Place of Birth:** Torino (TO) - Italy
- **Nationality:** Italian

Education

Doctor of Philosophy Nov. 2023 – Present

University of Salerno — Salerno (SA) - Italy

Ph.D. course in Computer Science at Software Engineering Salerno (SeSa) Lab

Advisor: Prof. Fabio Palomba

Visiting Researcher Mar. 2026 – Jun. 2026

University of Birmingham — Birmingham - UK

Visiting PhD Student at VRLab

Advisor: Prof. Daniele Giunchi

Master's Degree (cum laude) Sep. 2021 – Sep. 2023

University of Salerno — Salerno (SA) - Italy

Master's Degree in Computer Science with final grade 110/110 cum laude

Thesis title: “The Metaverse Classroom: Development and Evaluation of an Engineered Educational Metaverse”

Supervisor: Prof. Fabio Palomba

Bachelor's Degree (cum laude) Sep. 2018 – Sep. 2021

University of Salerno — Salerno (SA) - Italy

Bachelor's Degree in Computer Science with final grade 110/110 cum laude

Thesis title: “Automated Generation of 3D Human Models for Virtual Fitting”

Supervisors: Prof. Andrea F. Abate, Dr. Ignazio Passero

Research Areas

My main research areas cover the potential of 3D virtual environments and interconnected worlds from their definition and design to their practical applications.

- **Metaverse & Virtual Worlds:** This part of the research analyzes the evolution, foundations, and emergence of the metaverse, exploring how interconnected virtual environments and Extended Reality technologies can provide persistent and immersive spaces for social interaction, collaboration, and presence.
- **GenAI for Virtual Environments:** The ever-increasing power of GenAI is also particularly suitable in the context of virtual 3D environments. This part of the research investigates how Generative AI and Machine Learning can empower users in designing and authoring virtual spaces, with a focus on Human-AI interaction, co-creative tools, and automated 3D scene generation to enhance creative workflows.
- **Virtual Environments Applications:** Virtual Environments can be exploited in many practical contexts and applications. This part of the research evaluates the practical impact of immersive virtual spaces through empirical studies across specific application domains, particularly in *Education* (e.g., interactive classrooms and simulated learning) and *E-Health* (e.g., virtual environments tailored for diabetes early diagnosis training and patient support).

Publications

Journal Articles

- **V. Pentangelo**, C. Gravino and F. Palomba. “From Zero to Hero: A Scoping Review of the Emergence of the Metaverse in the Virtual Environments History.” *Journal of Virtual Reality*, 2026.
- **V. Pentangelo**, A. Della Porta, C. Gravino and F. Palomba. “TAVERN: A Human-AI Interaction System for Generative AI-Driven 3D Scene Co-Creation.” Preprint available on SSRN, 2025.
- **V. Pentangelo**, D. Di Dario, V. De Martino, M. Dello Buono and S. Lambiase. “Towards AI-Powered Automatic 3D Scene Generation for the Metaverse: A Comparative Analysis of Manual and Photogrammetry Techniques.” Submitted to *Cluster Computing Journal*. Preprint available on ResearchSquare, 2025.
- D. Di Dario, **V. Pentangelo**, B. Scala, S. Lambiase, F. Palomba, C. Gravino. “The Good and the Bad of Teaching Social Debt and Community Smells Using Virtual Reality” Submitted to *Empirical Software Engineering International Journal*, 2025.
- **V. Pentangelo**, L. Turco, S. Lambiase, C. Gravino and F. Palomba. “SENEM-AI: Leveraging LLMs for student behavior simulation in virtual learning environments.” *SoftwareX*, 2025.
- **V. Pentangelo**, D. Di Dario, S. Lambiase, F. Ferrucci, C. Gravino and F. Palomba. “SENEM: A software engineering-enabled educational metaverse.” *Information and Software Technology*, Page 107512, 2024.

Conference & Workshop Proceedings

- **V. Pentangelo**, S. Serafin and F. Palomba. “Virtual Pedagogical Agents in Educational VR for Neurodivergent Learners: A Literature Review.” Proceedings of the 2nd Workshop on Artificial Intelligence with and for Learning Sciences (WAILS 2025), 2025.
- **V. Pentangelo**, S. Tabet, S. Lambiase, A. Kayssi, I. H. Elhajj and F. Palomba. “Privacy-aware 3D Reconstruction and Obfuscation in the Metaverse.” Proceedings of the 3rd International Conference on Intelligent Metaverse Technologies & Applications (iMETA 2025), 2025.
- F. Cardia, **V. Pentangelo**, S. Lambiase, C. Gravino, F. Palomba and M. Marras. “Toward Realistic AI-Generated Student Questions to Support Instructor Training.” Proceedings of the European Conference on Technology Enhanced Learning (ECTEL 2025), 2025.
- **V. Pentangelo**, D. Di Dario, V. De Martino, M. Dello Buono and S. Lambiase. “Accelerating 3D scene development for the metaverse: Lessons from photogrammetry and manual modeling.” Proceedings of the 2nd International Conference on Intelligent Metaverse Technologies & Applications (iMETA 2024), 2024.
- D. Di Dario, **V. Pentangelo**, M. I. Colella, F. Palomba and C. Gravino. “Collecting and Implementing Ethical Guidelines for Emotion Recognition in an Educational Metaverse.” Proceedings of the 1st International Workshop on User-Centered Practices of Knowledge Discovery in Educational Data (UKDE 2024), 2024.
- D. Di Dario, G. Sellitto, **V. Pentangelo**, M. L. Fede and F. Ferrucci. “Breaking barriers in the metaverse: A comprehensive exploration of accessibility for users with disabilities.” Artificial Intelligence with and for Learning Sciences. Past, Present, and Future Horizons (WAILS 2024), pages 45–55, 2024. Springer Nature Switzerland.
- G. Voria, **V. Pentangelo**, A. Della Porta, S. Lambiase, G. Catolino, F. Palomba and F. Ferrucci. “Community Smell Detection and Refactoring in SLACK: The CADOCS Project.” IEEE International Conference on Software Maintenance and Evolution (ICSME), 2022.

Teaching and Theses Activities

Co-Supervisor of 20+ Theses

2023 – 2026

Co-supervision of 20+ B.Sc. and M.Sc. theses in Computer Science.

Exam Support for Software Engineering For Artificial Intelligence

2025, 2026

University of Salerno — Salerno (SA) - Italy

Part of the examination board of the course of Prof. Fabio Palomba at the Master’s Degree of Computer Science at the University of Salerno.

Exam Support for Fundamentals of Artificial Intelligence

2025, 2026

University of Salerno — Salerno (SA) - Italy

Part of the examination board of the course of Prof. Fabio Palomba at the Master’s Degree of Computer Science at the University of Salerno.

Guest Lecturer for Software Engineering For Artificial Intelligence

2024

University of Salerno — Salerno (SA) - Italy

Guest Lecturer in the course of Prof. Fabio Palomba at the Master’s Degree of Computer Science at the University of Salerno.

Teaching Assistant of Fundamentals of Artificial Intelligence

2023

University of Salerno — Salerno (SA) - Italy

Teaching Assistant in the course of Prof. Fabio Palomba at the Bachelor's Degree of Computer Science at the University of Salerno.

Talks & Seminars

Fact & Snack Seminar Cycle

2026

University of Birmingham — Birmingham, UK

Presentation titled “TAVERN: A Human-AI Interaction System for Generative AI-Driven 3D Scene Co-Creation”, *organized by the Computer Science Department at University of Birmingham.*

2nd Workshop on AI with and for Learning Sciences

2025

WAILS 2025 — Cagliari, Italy

Paper Presentation titled “Virtual Pedagogical Agents in Educational VR for Neurodivergent Learners: A Literature Review”, *at the 2nd Workshop on Artificial Intelligence with and for Learning Sciences (WAILS 2025).*

3rd Int. Conference on Intelligent Metaverse Tech. & Applications

2025

iMETA 2025 — Dubrovnik, Croatia

Paper Presentation titled “Privacy-aware 3D reconstruction and obfuscation in the metaverse”, *at the 3rd International Conference on Intelligent Metaverse Technologies & Applications (iMETA 2025).*

2nd Int. Conference on Intelligent Metaverse Tech. & Applications

2024

iMETA 2024 — Dubai, UAE

Paper Presentation titled “Accelerating 3D Scene Development for the Metaverse: Lessons from Photogrammetry and Manual Modeling”, *at the 2nd International Conference on Intelligent Metaverse Technologies & Applications (iMETA 2024).*

15th Seminar on Advanced Tech. & Tools for Software Evolution

2023

University of Salerno — Salerno, Italy

Presentation titled “Conversational Agents for the Detection Of Community Smells: The CADOCS Project”, *at the 15th Seminar on Advanced Techniques & Tools for Software Evolution (SATToSE 2023) @ ISSSE 2023.*

Organizing Committee Member & Service

Int. Conference on Intelligent Metaverse Tech. & Applications

2026

iMETA 2026

Technical Program Committee Member for the *International Conference on Intelligent Metaverse Technologies & Applications (iMETA 2026).*

Software Engineering and Advanced Applications

2026

SEAA 2026

Program Committee Member for the 52nd Euromicro Conference Series on *Software Engineering and Advanced Applications (SEAA 2026).*

International Summer School on Software Engineering <i>Salerno, Italy</i>	2026
Student Volunteer for the 18th <i>International Summer School on Software Engineering</i> (ISSSE 2026).	
Artificial Intelligence with and for Learning Sciences <i>WAILS 2025</i>	2025
Publicity Chair for the 2nd Workshop on <i>Artificial Intelligence with and for Learning Sciences</i> (WAILS Workshop 2025).	
Euromicro Conference Series in Salerno <i>Salerno, Italy</i>	2025
Graphic Chair & Student Volunteer for the <i>Euromicro Conference Series in Salerno 2025</i> .	
Security Testing for Complex Software Systems <i>Salerno, Italy</i>	2024
Web & Publicity Chair for the 1st Workshop on <i>Security Testing for Complex Software Systems</i> (SECUTE 2024).	
Evaluation and Assessment in Software Engineering <i>Salerno, Italy</i>	2024
Local Arrangement Committee Member for the 28th Conference on <i>Evaluation and Assessment in Software Engineering</i> (EASE 2024).	
International Summer School on Software Engineering <i>Salerno, Italy</i>	2024
Student Volunteer for the 17th <i>International Summer School on Software Engineering</i> (ISSSE 2024).	

Reviewer Service

Int. Conference on Intelligent Metaverse Tech. & Applications	2026
Reviewer for the <i>International Conference on Intelligent Metaverse Technologies & Applications</i> (iMETA 2026)	
IEEE Int. Symposium on Mixed and Augmented Reality	2026
Subreviewer for the IEEE <i>International Symposium on Mixed and Augmented Reality</i> (ISMAR 2026)	
Software Engineering and Advanced Applications	2026
Reviewer for the 52nd Euromicro Conference Series on <i>Software Engineering and Advanced Applications</i> (SEAA 2026)	
Journal of Ambient Intelligence and Humanized Computing	2026
Reviewer for the <i>Journal of Ambient Intelligence and Humanized Computing</i>	
SoftwareX	2024
Reviewer for the <i>SoftwareX</i> Journal	
Computer-Supported Cooperative Work & Social Computing	2024
Reviewer for the 28th ACM SIGCHI Conference on <i>Computer-Supported Cooperative Work & Social Computing</i> (CSCW 2024)	

Artificial Intelligence with and for Learning Sciences 2024
Reviewer for the 1st Workshop on *Artificial Intelligence with and for Learning Sciences* (WAILS 2024)

Multimedia Tools & Applications 2023
Reviewer for *Multimedia Tools & Applications* International Journal
Reviewer for *Multimedia Tools & Applications Special Issue: Metaverse and E-Learning Platforms*

Academic Projects

TAVERN | *Unity3D, C#, GenAI, Python* 2025
A Human-AI Interaction system for generative AI-driven 3D scene co-creation, from concept to final scene composition
figshare.com/s/8bab8a96dc016aaabe4

SENEM-AI Virtual Students | *Unity3D, C#, LLMs, Python* 2025
LLM-powered virtual students simulating realistic classroom interactions within a 3D metaverse
github.com/vipenti/SENEM_Metaverse

SENEM Educational Metaverse | *Unity3D, Photon, C#, Blender* 2023
A collaborative 3D virtual environment for academic and educational purposes developed with Unity3D
github.com/vipenti/SENEM_Metaverse

CADOCS | *Python, Slack, NLU* 2022
A conversational agent for the detection of community smells
github.com/vipenti/CADOCS_NLU_Model

AI Plays Tetris | *Unity3D, C#, ML-Agents* 2022
A Unity3D and ML-Agents project with neural network trained by reinforcement learning that plays the Tetris game
github.com/vipenti/Tetris-MLAgents

ASL Alphabet Recognition | *Python, CNN* 2022
A Convolutional Neural Network that can recognize the ASL Alphabet live with a webcam
github.com/vipenti/ASL-Alphabet-Recognition-RealTime

3D Human Body Generator | *Python, Blender, HTML* 2021
A web tool to create a fully customizable 3D human body with given the body measurements
github.com/vipenti/3D-Human-Body-Generator

Biblionet | *HTML, CSS, Java, JavaScript, Spring Boot, Thymeleaf* 2021
A Spring Boot web application for library support
github.com/StefanoLambiase/biblionet

English Certifications

Certification of General English at level C1

Aug. 2018

University College of Dublin Centre — Dublin, Ireland

Certification obtained after a two-week English school in the University College of Dublin

Certification of General English

Aug. 2017

Embassy Docklands Centre — London, England

Certification obtained after a two-week English school in the Embassy Docklands of London

Cambridge English Certificate Level B2

Jun. 2016

Salerno (SA) - Italy

Cambridge English Level 1 Certificate in ESOL International (Preliminary)

Technical Skills

Languages: Python, C, C#, Java, LaTeX, R

Web: HTML5, CSS, JavaScript, Bootstrap, Thymeleaf

Framework: Spring MVC, Spring Boot, Robot Operating System, Selenium

Tools: : Unity3D, Blender, IntelliJ, Eclipse, VS Code, NetBeans, PyCharm, Android Studio, R Studio, Jupyter, Balsamiq, Visual Paradigm

Database: SQL, MongoDB

Versioning: Git, GitHub, GitLab

Privacy Treatment

In compliance with the GDPR and the Italian Legislative Decree no. 196 dated 30/06/2003, I hereby authorize you to use and process my personal details contained in this document.

Fisciano, 28th July 2026

