Andrea Loretti

Personal Information

- Date of Birth: November 16, 2000
- Born in: Foggia (FG)
- Gender: Male
- Nationality: Italian
- City of Residence: Foggia (FG)
- Driving License: B, A1.

Contacts

- Phone: (+39) 320 573 4488
- Institutional Email: a.loretti@unibo.it
- Personal Email: andrea.loretti00@gmail.com
- Certified Email (PEC): andrea.loretti@pec.it

Languages

- Italian: Native
- English: CEFR B2 (CLA - December 2022)
- German: CEFR A1 (Universität Bielefeld - October 2023)

IT Skills

- Operating Systems: Linux, Windows, MacOS.
- Office Suites: Microsoft Office, LibreOffice, Google Documents, LaTeX.
- 3D Modeling and Printing Software: UltiMaker Cura, Meshmixer, Blender, Unity.

Programming Languages and Tools

- Languages: C, C++, C#, Java, Python, JavaScript.
- Tools and Frameworks: OpenGL, Arduino, HTML, CSS, Angular, jQuery, Git.
- Databases and Analysis: Basic knowledge of SQL, AccessData FTK Imager, Autopsy, Mathematica, Omnet++.

Education and Training

2023/09 – 2024/03: Master's Program in Intelligent Interactive Systems (Double Degree in Germany) at the University of Bielefeld. Level 8 EQF. Institutionen. Universität Bielefeld (Uni Bielefeld).

2022 – 2024: Master's Program in Computer Science at the University of Bologna with a final score of 110/110 following the thesis work: "Mixed reality for surgeons training in neurosurgical procedures" Level 8 EQF. ALMA MATER STUDIORUM - University of Bologna.

2019 – 2022: Bachelor's Degree in Computer Science at the University of Bologna with a thesis entitled: "Dashboard to monitor software development: critical issues, advantages" . Level 6 EQF. ALMA MATER STUDIORUM - University of Bologna.

2014–2019: High School Diploma from Liceo Scientifico, Liceo Scientifico Statale "A. Volta". Level 4 EQF.

Work Experience

November 2024 – Present: Researcher at the University of Bologna at the VARLab: Virtual and Augmented Reality Lab .

May 2023 – Present: Tutor for the course *Metodi Informatici per La Trasformazione Digitale* (Master's in Governance and Policies of Digital Innovation) at the University of Bologna.

May 2023 – Present: System Administrator for the CAS environment at the University of Bologna.

January 2023 – Present: System Administrator for *Studio Legale Trebbi Giordani e Associati* and Website Curator.

Projects Developed

All the projects I have developed can be found on my Github profile:

github.com/Stintipacchio

Teaching and Virtual Reality:

- **NeuroMix** is a system designed to provide an interactive mixed reality simulation for the insertion of an intraventricular catheter into the human skull, developed using Unity and the Meta Quest 3 headset. The aim of the system is to offer an immersive and realistic training environment for medical students and professionals.
- **VR_Board** is an innovative peripheral in the form of a board, built using a combination of load cells and buttons developed with Arduino. It allows interaction with Virtual Reality experiences not only with the hands and head, but also with the feet. The idea arose from the desire to make Virtual Reality experiences even more immersive, offering a locomotion system that complements hand tracking. Additionally, this project aims to make virtual reality more accessible, allowing its use even for those who cannot use their hands.

My Publications

- Paolo Ciancarini, Andrea Loretti, Marcello Missiroli, Andrea Schinoppi,
  Training students to choose their agile practices and tools
  Presented at the IEEE CSEE&T 2023 Conference.
- Pasquale Cascarano, Andrea Loretti, Alessio Di Pasquale, Shirin Hajahmadi, Giacomo Vallasciani, Luca Zanuttini, Matteo Martinoni, Gustavo Marfia,
  Diegetic User Interfaces in Extended Reality for 3D Medical Visualization
  Published in **IEEE Conference on Virtual Reality and 3D User Interfaces Abstracts and Workshops (VRW), 2024.**
- Vincenzo Armandi, Andrea Loretti, Lorenzo Stacchio, Pasquale Cascarano, Gustavo Marfia,
  Multi-Modal Large Language Model driven Augmented Reality Situated Visualization: the Case of Wine Recognition
  Published in **IEEE/CVF Winter Conference on Applications of Computer Vision Workshops (WACV VisionDocs), 2025.**

Academic Collaborations

- **Collaboration with the University of Bielefeld** under the supervision of Prof. Philipp Cimiano. I contributed to the project **DDRUM** (Drugs, Diseases, RDF Und MesH), developed to integrate various medical databases through an RDF (Resource Description Framework) platform. The project consists of a web interface that facilitates access and search of centralized clinical data via a SPARQL endpoint, supported by a Flask application and a Fuseki server. The main objective was to optimize the retrieval and analysis of medical information for researchers and healthcare professionals, ensuring an accessible and unified system for consulting clinical data.
- **Collaboration with the Virtual and Augmented Reality Laboratory** (VAR Lab) of the University of Bologna and Bellaria Hospital under the supervision of Prof. Gustavo Marfia. I contributed to the project **Neuromix**, developed in close collaboration with a team composed of Andrea Loretti and Alessio Di Pasquale as lead developers, under the supervision of Prof. Pasquale Cascarano. The project also benefited from the specialist consultation of Dr. Matteo Martinoni, a renowned neurosurgeon. Neuromix aims to explore the application of virtual and augmented reality in the medical field, leveraging advanced technologies to support the analysis and treatment of neurological conditions.
- **Collaboration with the University of Bologna** under the guidance of Professors Paolo Ciancarini and Marcello Missiroli. At the IEEE CSEE&T 2023 Conference, held from August 7 to 9, 2023 at Waseda University in Tokyo, Japan, the work entitled *Training students to choose their agile practices and tools* was presented.
  The paper explores how to train computer science students in the autonomous selection of agile practices and tools in a collaborative software development context, describing an educational experience in which student teams develop a Twitter client application with advanced functionalities and evolving requirements. This exercise simulates a real work environment, requiring flexible decisions on methodologies. Students employ open-source tools for project management and collaboration, such as Git for version control and Trello for task management, and critically reflect on practices like Scrum and Kanban, selecting those most suitable for their needs. This approach aims to develop an agile and pragmatic mindset, preparing students to make informed decisions and adapt to workplace challenges.

Personal Interests

I am passionate about DIY (Do It Yourself), 3D printers, virtual and augmented reality, home automation systems, 3D rendering (Blender), and video and photo editing. I am also interested in all fields related to nutrition, sports, and overall well-being.