Marco Carloni

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WORK EXPERIENCE

Freelancer (AI & Advanced XR Solutions)   Jan. 2024 – Present
AI Developer / XR Solution Architect   *Remote*

- **Integrated AI-driven systems into Unity,** including modules for real-time text, image, and media generation to enhance interactivity and immersion in XR environments.
- **Developed intelligent automation systems**, such as a smart email-based manuscript analysis tool that extracts PDFs, applies NLP and AI scoring for grammar, narrative, and coherence, and generates professional editorial feedback automatically.
- **Built chatbot frameworks**, small fine-tunings, and customized AI behavior to enable dynamic conversational agents and personalized experiences inside XR or standalone platforms.
- **Combined VR and AI technologies** to power virtual assistants, adaptive learning systems, and generative storytelling environments.
- Maintained architectural leadership, ensuring clean integration between Unity, Python, and web-based AI services for scalable production-ready tools.
- **Designed and optimized prompting strategies for LLMs** (GPT, Claude, Gemini, Mistral, LLaMA) with a focus on accuracy, reliability, and computational efficiency.
- **Developed RAG pipelines and agentic AI applications**, enabling context-aware reasoning, tool usage, and automated workflows.
- **Implemented image-generation workflows** using LoRA, LyCORIS, Stable Diffusion, custom models, ControlNet, CFG scale tuning, denoising strength optimization, and advanced inpainting/outpainting techniques.

Freelancer (XR & Game Development)   Jan. 2019 – Present
Solution Architect / XR Unity Developer   *Remote*

- **High-Impact XR Solutions**: Designed and developed immersive AR/VR/XR applications—including medical simulations, industrial training platforms, and educational experiences—using **Unity 3D, C#, AR Foundation, MRTK, ARKit, ARCore, Vuforia, Wikitude, EasyAR, Photon, Forge, AWS,** etc etc. to deliver cutting-edge interactive systems.
- **Architectural & Technical Leadership:** Engineered full-stack solutions with **PHP**, **MySQL**, and **REST APIs**, from concept to deployment across multiple platforms (**Meta Quest**, **Google Play**, **Apple Store**), ensuring scalable, high-performance architectures.
- **Client Partnership & Detailed Requirements Gathering:** Collaborated closely with clients to capture precise project objectives and translate innovative ideas into robust XR applications. These solutions feature optimized Unity interfaces and finely tuned graphical performance tailored to specific project needs.
- **Optimization & Quality Assurance**: Drove rigorous testing, critical bug fixes, and performance optimization across projects, ensuring reliability and smooth user experiences, including collaborations with industry leaders such as Ubisoft for hyper-casual game prototypes.

Ambiens VR   Oct. 2017 – Dec. 2018
Unity Developer / Solution Architect   *Rome, Italy*

- Engineered immersive VR applications and integrated front-end/back-end systems to create seamless user experiences

Freelancer   Dec. 2016 – Oct. 2017
Solution Architect   *Remote*

- Developed mobile games and XR apps with robust architectural design and rapid prototyping techniques.

E-fil   Oct. 2013 – Dec. 2016

DBA / Solution Developer · *Rome, Italy*
- Managed databases, system migrations, and technical documentation to ensure robust internal applications.

Selex ES · **Mar. 2012 – Oct. 2013**
Software Consultant · *Rome, Italy*
- Optimized data processing and customer management for the SISTRI waste tracking system.

Bitmedia · **Oct. 2012 – Dec. 2012**
Software Consultant / Customer Care · *Rome, Italy*
- Analyzed and integrated municipal data while providing technical support via ticketing systems.

Generali Business Solution (Kirey s.r.l. / Unisys Italia) · · · · · · · · · · · · · · · · · · **Oct. 2007 – Jun. 2012**
Software Consultant / Database Administrator · *Rome, Italy*
- **Database & System Administration:** Managed Unix environments, executed backups, optimized shell scripts and handled daily production operations with Remedy ticketing
- **Technical Support & Customer Care:** Delivered technical support, coordinated multi-stage testing and provided customer service with basic system administration

EDUCATION

I.T.I.S. Antonio Pacinotti · **2007**
Senior High School Degree in Information Technology · *Rome, Italy*

TECHNOLOGIES, SKILLS & INTERESTS

Technologies:
- Programming & Frameworks: PHP, C#, .NET, HTML & CSS, Java, C++/Visual C, Python
- Game & XR Development: Unity Engine, AR Foundation, MRTK, ARKit, ARCore, EasyAR, Vuforia, MRUK, Hurricane VR , Photon
- Database & Scripting: SQL, VB6, Bash Scripting
- Additional Skills: Video game content creation

Skills:
- Technical Leadership: System architecture, full-cycle XR development, software integration, and performance optimization
- Project Management & Soft Skills: Problem solving, Test Management, Customer Care, team coordination, and training of new resources
- Digital Competencies: Proficient in information processing, independent in communication and content creation, with a focus on safety and problem-solving

Interests:
- Professional: XR innovation, immersive AR/VR experiences, and advanced game development, AI
- Personal: Yoga; Music, Paintings, Board Games.