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Reseach experience and interests

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Research experience

My interest for virtual reality started much before my Ph.D. work. As I started to **develop virtual environments in 1997** (when working as developer for artists), I had the opportunity to work on Silicon Graphics computers (O2, ONYX) and to interface various trackers and displays. Around this time, I decided to pursue a more theoretical and experimental way than the one I was supposed to follow after an engineering diploma.

I therefore had to do a Master before doing a thesis (engineering diploma was not recognized by universities), and obtained one in 2000 (and became a father in between). The specialization I took was on **artificial intelligence and neural networks**. I also had the opportunity to become more familiar with scientific methods, mathematics for computing and graphics, multiprocessing, etc.

Although I started my Ph.D. on a rather engineering-oriented European project (which was paying my Ph.D. at VRLab), I had the luck to be involved into a local Swiss project linking VR and psychotherapy. This project about the "virtual reality exposure therapy" of phobias became my Ph.D. topic, and the core of my research interest for my last 3 years at VRLab. In 2005, I presented my **experimental work on the exposure of people to social anxiety provoking virtual environments**, and Dr. F.Riquier continued the clinical validation of the software tools (providing real-time animation and control of virtual humans).

To follow up on this work, without entering into the production of more VR scenarios, I decided to follow the experimental work of T.Brooks in Denmark. There, I took part in the creation of the Sensorama Laboratory, a place dedicated to the **experimental work on the use of interaction and multimedia technologies (including VR) for rehabilitation** and special needs. As I had an Assistant Professor position there, I also had quite a lot of teaching and took part in the elaboration of multiple research grant applications.

Axes of research

Virtual reality therapy and rehabilitation systems Evaluation of immersive setups, experimentation with interaction paradigms, human activity monitoring and observation, cross-disciplinary collaboration.

Virtual environments and the immersive process Sense of presence, perception and sensory illusions, multimodal and cross-modal interaction, links between psychology, cognitive sciences and computer-mediated experiences.

VR and the arts Using media technologies in unorthodox ways, developing people awareness to art through new experiences.

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