Remi **Cambuzat**

RESEARCH ENGINEER IN MIXED REALITY, ROBOTIC, HAPTICS AND DIGITAL ARTS

remicambuzat.pro@pm.me | kosenh.gitlab.io | remicambuzat

Skills

Mixed Reality	Human-Computer Interface, Haptics, Telepresence, XR
Multimedia	Unreal Engine (blueprints & C++), Unity3D, Photoshop, Gimp
Programming	C, C++, C#, Python, LaTeX, OOP programming, CMAke, Git, CI/CD pipelines
Robotics	R.O.S, YARP iCub, Pepper
Instrumentation	Matlab, Labview
System engineering	Windows, Linux, Immersive Virtual Reality Setup (CAVE)
Languages	**French** (Native, C2), **English** (Fluent, C1 – TOIEC : 875), **German** (Academic, B2)
Power skills	Creative & Critical thinking, Research & Innovation, Technology forecasting, Resourcefulness Work ethics, Diplomacy & Teamwork, Mentoring & Leadership

Research projects

- *2024-2025 :* IEEEVR 2025 XR Gallery Saint-Malo, France
- *2023-2025 :* Contributing to immersive crowd research where humans and virtual agents are coexisting with a sufficient level of realism .
- *2021-2023 :* Developing mixed reality virtual training systems to improve workers safety : Caduta dall'Alto
- *2021-2023 :* Immersive teleoperation for emergency scenarios on quadruped robot : Robot Teleoperativo 2
- *2016-2019 :* Research on Immersive teleoperation of telepresence robots : TENSIVE project
- *2015-2016 :* Characterizing postural control through visual stimulis , internships, 6 months
- *2013-2015 :* Immersive project reviews with native CAD data , internships , 4 and 6 months

Experience

IEEEVR 2025 XR Gallery

Saint-Malo, France

CHAIR

February. 2024 - March. 2025

As part of the prestigious IEEEVR A* conference on XR research. I had the privilege to chair the first edition of the *IEEEVR 2025 XR Gallery* fostering bridges between digital artists and researchers questioning the fundamentals of the immersive spaces we're interacting with daily. Despite their intellectual affinities, bringing these two worlds together required a great deal of compromise and adaptation.

We got positively surprised by the amount of great quality submissions we got for this new format (68 submission, 25 Shortlisted after a double-blind review process , 17 accepted). A bit more than 12000+ people attented the event between march 10-12 2025 in Saint Malo France. According to feedback from researchers and artists, the first edition of the IEEEVR25 XR gallery was a great success.

Technical environment : A* International Conferences
Keywords: Event management, Logistic, Digital art

INRIA Rennes,*VirtUS team*

Rennes, France

IMMERSIVE CROWD RESEARCH : XR RESEARCH ENGINEER

December. 2022 - December 2024

As an XR research engineer in the VirtUs research team, I was involved in the creation of immersive spaces (VR/XR) where real humans and virtual agents are coexisting with a sufficient level of realism so that the virtual experience and its results can be transposed into reality. In this role, I maintained the team's XR hardware and softwares (*CrowdMP/UMANS*) while also providing supervision.

Technical environment : Unity3D, Unreal Engine, Various VR devices (Vive, Quest)
Keywords: Crowd simulation, Mixed Reality (MR/XR), Virtual Training Environment (VTE), Supervision

Istituto Italiano di Tecnologia (*IIT*),Advanced Robotics (*ADVR*), *VICARIOS* Mixed Reality and Telerobotics research lab

Genova, Italy

CADUTA DALL'ALTO & ROBOT TELEOPERATIVO 2 PROJECTS — *May. 2021 - January. 2023*

Caduta dall'Alto (Falling from Heights) is a project exploring a set of novel safety and mixed reality virtual training systems to improve workers safety when working at heights. The main challenges lie in the precise understanding of the mechanisms leading to the fall, in reliable bio-mechanical models, and in a realistic design for a mixed reality training environment. At the same time, ergonomics must be thoroughly investigated with field professionals to ensure their specific needs and peculiar concerns are fully met.

"Robot Teleoperativo 2 is addressing immersive and collaborative teleoperation use-cases in challenging environments. Part of my work here is directed towards efficient integration of sensors data from the robotic platform as well as their meaningful representation inside a virtual environment for the pilot operator and his collaborators. Both of thoses projects are being conducted with INAIL (Italian National Institute for Insurance against Accidents at Work).

Technical environment : Unreal Engine (blueprints & C++), HTC VIVE, Occulus Quest, Haptic gloves
Keywords: Telepresence, Immersive Safety Training, Virtual Training Environment (VTE), Mixed Reality (MR/XR), Digital Twin, Robotic

GIPSA-lab, Univ. Grenoble-Alpes / INRIA Grenoble

Grenoble, France

TENSIVE : IMMERSIVE TELEOPERATION OF TELEPRESENCE ROBOTS FOR VERBAL INTERACTION AND SOCIAL NAVIGATION — *October. 2016 - August 2019*

The TENSIVE project aims to design and evaluate a new generation of immersive telepresence robot control devices, with enhanced navigation and verbal interaction capabilities, for a humanoid telepresence robot. TENSIVE's challenges aim to induce a virtual "embodiement" inside the robotic platform through a coherent visual representation of the distant world (head & eyes). As well as offering a semi-automatic immersive navigation based on the pilot's body and gaze movements.

Technical environment : ROS, YARP, Unity3D, Matlab, C++, C#, HTC VIVE, SMI eyetracking
Robotic platforms : iCub, Pepper (Aldebaran)
Keywords: Telepresence, Social Navigation, Immersive VErbal Interaction, Social robotics, Virtual reality, Eye Tracking

ISIR - Institute of Intelligent Systems and Robotics (UPMC)

Paris, France

CHARACTERIZING POSTURAL CONTROL THROUGH VISUAL STIMULIS — *February. 2016 - June 2016*

In this research internship, I characterized the rôle of vision in postural control. Based on the work done on the "Moving Box paradigm" (Lee1978), I'm understanding how vision can influence balance and drive it. Our setup platform consist of a VR head-mounted-display and a force platform (wii balance board).

Master Dissertation : "Mise en place et validation d'une plateforme de perturbation de la posture par des stimuli visuels" (Université Pierre et Marie Curie – July 2016)

LIMSI – Laboratoire d'informatique pour la mécanique et les sciences de l'ingénieur

Orsay, France

VISIO-HAPTIC INTERACTION WITH NATIVE CAD DATA — *February. 2015 - September 2015*

In this research internship, I have explored the use of haptic devices in immersive project reviews in order to offer news paradigms for an accurate modification CAD objects.

Master Dissertation : "Visio-haptic interaction with native CAD data : Use of Haptic abacus" (Université Paris-Sud – August 2015)
Technical environment : CATIA + CAA, Virtual Reality Setup (CAVE), Virtuose & Scale 1 (Haption)

Orsay, France

IMMERSIVE INTERACTION WITH NATIVE CAD DATA — *May. 2014 - September 2014*

In this internship, I was asked to understand the thesis demonstrator of Pierre Martin's. Demonstrator used for immersive project reviews, and enhance it with new CAD operator.

Master Dissertation : "Interaction Immersive avec des données CAO natives" (Université Paris-Sud – August 2014)
Technical environment : CATIA + CAA, Virtual Reality Setup (CAVE)

CETIAT – Centre Technique des Industries Aérauliques et Thermiques

Villeurbanne, France

AUTOMATION OF A MEASUREMENT BENCH USING OCR — *April. 2011 - June 2011*

Scouts et Guides de France

France

SCOUT LEADER — *June – July, 2011 – Present*

Education

Gipsa-Lab (CNRS - Grenoble INP) / INRIA

Grenoble,France

DOCTORAL PROGRAM IN IMMERSSIVE TELEPRESENCE — *October 2016 - August 2019*

UPMC (Université Pierre-et-Marie-Curie), Arts et Métiers ParisTech - École Nationale Supérieure d'Arts et Métiers

Paris,France

MASTER'S DEGREE IN ROBOTIC : M2 SDI-SAR ("SYSTÈMES AVANCÉS ET ROBOTIQUE") — *September 2015 - 2016*

UPSud (Université Paris Sud – Paris XI) *Orsay,France*

Research Master's Degree in Human Computer Interaction : M2R "interaction" *September 2014 - 2015*

EFREI (École française d'électronique et d'informatique) *Villejuif,France*

Engineer Degree in virtual reality , digital processing, and computer sciences *September 2012 - 2015*

Université Paris-Est *Marne-la-Vallée, France*

Bachelor in computer science : Mention Mathematiques Et Informatique *September 2012 - 2013*

Jönköping Tekniska Högskolan (Engineering School of Jönköping) *Jönköping, Sweden*

International Bachelor in engineering *September 2011 - 2012*

IUT Mesures Physiques, Université Jean Monnet *Saint-Etienne, France*

Higher National Diploma (DUT): Applied Physics and measurements Degree in instrumentation *September 2009 - 2011*

Publication

Immersive Teleoperation of the Eye Gaze of Social Robots Assessing Gaze-Contingent Control of Vergence, Yaw and Pitch of Robotic Eyes
ISR 2018, 50th International Symposium on Robotics
Remi Cambuzat, Frédéric Elisei, Gérard Bailly, Olivier Simonin, Anne Spalanzani
Jun 2018, Munich, Germany

SGCS: Stereo Gaze Contingent Steering for Immersive Telepresence
ECEM 2017, 19th European Conference on Eye Movements
Remi Cambuzat, Frédéric Elisei, Gérard Bailly
August 2017,wuppertal, Germany

Mise en place et validation d'une plateforme de perturbation de la posture par des stimuli visuels
UPMC
Master thesis
July 2016

Visio-haptic interaction with native CAD data : Use of Haptic abacus
UPSud
Master thesis
August 2015

Interaction Immersive avec des données CAO natives
UPSud
Master thesis
September 2014

Program Committees

2025 **XR Gallery Chair**, IEEE VR 2025 — *Saint-Malo, France*
2023 **Multimedia Chair**, ACM Siggraph MIG 2023 — *Rennes, France*

Extracurricular Activity

Associations

- ***ARTBYSS* collective:** In 2019, we created *ARTBYSS* a multidisciplinary artists' collective, investigating new digital and medias form: whether interactive, video-projected or immersive.
- ***Danse Neurale*:** I'm involved in the digital performance *Danse Neurale* created by Lukas Zpira, which fuses mind, body and machines into a unique sensory performance.
- ***VR Geeks:*** I'm a VR Enthusiast and old member of the association.

Others interest

- ***Sciences :*** I am a sciences nerd trying follow up in this ever changing world. I also do some DIY and digital side projects
- ***Travel :*** I'm enjoying being abroad, getting out of my comfort zone by experiencing new challenges, while discovering the beauty and diversity of the human being.
- ***Digital art:*** I'm involved in various digital installation performance questioning the links between humans and technology.