PITCH YOUR LAB – ISMAR 2017

VISUAL PERCEPTION LAB @SLIPGURU GROUP

University of Genoa -DIBRIS

DESCRIPTION OF THE LAB AND RESEARCH ACTIVITIES

The aim of our research is to develop new paradigms that allow us to achieve an ecological human-computer interaction in virtual, augmented and mixed reality environments. We assess the undesired effects (such as the visual fatigue and the perceptual discomfort) of the new visual technologies (e.g. 3D displays, mobile devices, virtual and augmented reality headsets) on the users, and we evaluate the usability of such technologies in various fields of application. In particular, we study the relationships between the spatio-temporal geometrical structure of VR/AR/MR and the human visual perception.

PEOPLE

Manuela Chessa, PhD – Assistant Professor (manuela.chessa@unige.it - www.dibris.unige.it/en/chessa-manuela)

Fabio Solari, PhD – Assistant Professor (fabio.solari@unige.it - www.dibris.unige.it/en/solari-fabio)

Chiara Bassano – PhD candidate

Giorgio Ballestin – PhD candidate

EQUIPMENT

Our research is mainly focused on the study and design of low-cost and affordable systems. The main devices in use in our lab are the following:

- VR Head-Mounted Displays (Samsung Gear VR, Oculus Rift, HTC Vive, Cardboards)
- AR Meta Vision (preordered)
- Smartphones and tablets (Samsung S6)
- Tracking devices (Microsoft Kinect, Leap Motion, Intel Real Sense)

COLLABORATIONS

- Dr. P. Kornprobst, Biovision team - INRIA Sophia Antipolis Méditerranée, France
- Prof. P. Bex, Department of Psychology, Northeastern University, Boston, MA, USA
- Dr. F. Bremond, INRIA Sophia Antipolis Méditerranée, France
- Dr. Paolo Pretto, Max Planck Institute for Biological Cybernetics, Tuebingen, Germany
- Dr. Bruno Herbelin, EPFL Center for Neuroprosthetics, Geneva, Switzerland

MAIN PUBLICATIONS

M. Chessa, G. Maiello, A. Borsari, PJ Bex (2016) The Perceptual Quality of the Oculus Rift for Immersive Virtual Reality. Human Computer Interaction, pp. 1-32

M. Chessa, G. Matafu', S. Susini and F. Solari (2016) An experimental setup for natural interaction in a collaborative virtual environment. 13th European Conference on Visual Media Production (CVMP16), 12-13 December 2016, London.

G. Maiello, M Chessa, F Solari, PJ Bex (2015) The (In) Effectiveness of Simulated Blur for Depth Perception in Naturalistic Images PloS one, 10(10), e0140230.

F. Solari, M. Chessa, M. Garibotti, S.P. Sabatini. (2013) Natural perception in dynamic stereoscopic augmented reality environments. Display 34(2), pp. 142-152.