BlenderVR Publications

BlenderVR and its architecture has been presented at several international conferences.

- D. Poirier-Quinot, “BenderVR - Software VR Solution,” at the Libre Virtual Reality Meeting, F/LAT : Free/Libre Art & Technology, Nov. 2015.
- D. Q. Felinto, D. Poirier-Quinot, D. Touraine, and B. F. Katz, “BlenderVR: Framework for multiplatform interactive and immersive VR,” in Blender Conference, (Amsterdam), Oct. 2015. download presentation or Watch the video of David's presentation:

```
<iframe width="630" height="360"
src="https://www.youtube.com/embed/stnJEnVEjCU" frameborder="0"
allowfullscreen align="middle"></iframe>
```

- B. F. Katz, D. Q. Felinto, D. Touraine, D. Poirier-Quinot, and P. Bourdot, “BlenderVR: Open-source Framework for Interactive and Immersive VR,” in IEEE Virtual Reality Conference (IEEEVR), (Arles), Mar. 2015, pp. 203-204. download paper download poster
- D. Poirier-Quinot, D. Touraine, and B. F. Katz, “BlenderCAVE: A flexible open source authoring tool dedicated to multimodal virtual reality,” in 5th Joint Virtual Reality Conference (JVRC), (Orsay), pp. 19–22, Dec. 2013. download paper
- D. Poirier-Quinot, D. Touraine, and B. F. Katz, “BlenderCAVE: A multimodal scene graph editor for virtual reality,” in 19th International Conference on Auditory Display (ICAD), (Lodz), ICAD, Oct 2013. download paper download presentation
- D. Poirier-Quinot, D. Touraine, and B. F. Katz, “BlenderCave 3D-s project, OpenSource architecture adaptation to virtual reality research expectations,” in Blender Conference, (Amsterdam), blender.org, Oct 2012.

Scientific works using BlenderVR

We would be pleased to publish your BlenderVR-related work here, contact blendervr@limsi.fr

Ghost Orchestra

* **VR restitution of the 850th anniversary concert of the Notre Dame de Paris cathedral**

Real-time navigation in a VR model of Notre Dame coupled with calibrated auralization of dry instruments tracks from Jules Massenet *La Vierge* oratorio. See the ghost-orchestra project page.

```
<iframe width="630" height="360"
src="https://www.youtube.com/embed/zk1us0NYfug" frameborder="0"
allowfullscreen></iframe>
```

Virtual Theatre

User Cohabitation in Immersive Virtual Environment

- **User Cohabitation in Multi-stereoscopic Immersive Virtual Environment for Individual Navigation Tasks**
- In a Multi-stereoscopic immersive system, several users may need to perform independent navigation to achieve loosely coupled collaboration tasks for a complex scenario. To provide users both an efficient control of virtual navigation and a guarantee of users' safety in the real workspace relative to the display system and between users, we proposed several alterations of the human joystick metaphor by introducing implicit adaptive control to allow safe individual navigation for multiple users. We conducted a user study with an object-finding task in a double-stereoscopic CAVE-like system to evaluate both users' navigation performance in the virtual world and their behavior in the real workspace under different conditions.
- BlenderVR served as the software platform, with head-tracking controlling the user's navigation and hand-tracking for object selection. All the interactive scenarios and the generation of experimental logs were achieved within BlenderVR.
- Weiya Chen, Nicolas Ladeveze, Céline Clavel, Daniel Mestre, Patrick Bourdot. 2015. User Cohabitation in Multi-stereoscopic Immersive Virtual Environment for Individual Navigation Tasks. IEEE Virtual Reality 2015, pp. 47-54.

6DoF Navigation in Virtual Worlds

- **6DoF Navigation in Virtual Worlds: Comparison of Joystick-based and Head-controlled Paradigms**
- 6DoF navigation in immersive virtual world can implemented in various ways. Two types of navigation techniques have been compared in a 4 faced-CAVE: joystick-based input devices and steering metaphors based on movements of the user's body, e.g. head-controlled paradigms. An experiment was carried out using objective and subjective measurements to assess user performance, the occurrence of cybersickness symptoms and the level of presence, when using either of these navigation paradigms.
- blenderCave served as the software platform, with various input devices controlling the user's flight through a series of navigational tasks. While the virtual world was static, the selection of various test configurations and generation of experimental logs were all achieved within blenderCave.
- Weiya Chen, Anthony Plancoulaine, Nicolas Férey, Damien Touraine, Julien Nelson, and Patrick Bourdot (2013) “6DoF navigation in virtual worlds: comparison of joystick-based and head-controlled paradigms”. In Proceedings of the 19th ACM Symposium on Virtual Reality Software and Technology (VRST '13). ACM, New York, NY, USA, 111-114. DOI=10.1145/2503713.2503754

CAVE-based Virtual Prototyping

- **CAVE-based Virtual Prototyping of an Audio Radiogoniometer: Ecological Validity Assessment**
- This study is concerned with the evaluation of the ecological validity of a virtual prototype implemented with BlenderVR. It exposes a simple methodology to qualitatively and quantitatively answer the *sine qua none* question “how much this virtual prototype reflects reality and which are the situations where it does significantly predict the physical prototype's performances?”.
- The virtual prototype, i.e. the BlenderVR scene, exploits various input devices (6 DoF tracking, Wii Balance Board, Wiimote, etc.) as control metaphors along with OSC communication towards MaxMSP to generate interactive audio feedback sonification based on geometrical data from the blender scene.
- David Poirier-Quinot, Brian FG Katz (2014) “CAVE-based Virtual Prototyping of an Audio Radiogoniometer: Ecological Validity Assesment”. Presented at the 20th International Conference on Auditory Display (ICAD2014), June 22-25, 2014, New York, NY. http://hdl.handle.net/1853/52064
- Video examples : Sonification Level example View of experiemental conditions