Expression of Interest

Contact Person/Scientist in Charge

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Universitat Politècnica de València (UPV)

Department / Institute / Centre

- **Name:** Communications Department / Gandia Campus / Polytechnic University of Valencia (UPV)

- **Address:** Campus de Gandía; Carrer Paranimf, 1; Grau de Gandia (46730)

- **Province:** Valencia

Research Area
Information Science and Engineering (ENG)

Brief description of the institution:

Universitat Politècnica de València (UPV) is the single Spanish Technical University that features in the main University world rankings. It is within the top 5 Spanish Universities with the highest revenue from both public research and knowledge transfer activities, and a national leader in patent license income and start up creation. Constituted in 1971, it comprises nearly 30.000 students, over 2500 academics, and 17 university research centres of excellence.

UPV has a relevant experience in the participation in international research programmes, with over 100 FP7 projects and 40 H2020 projects in the period 2014-2015. UPV researchers are also actively involved all H2020 life program stages, from workprogramme drafting discussions, to project coordination. It is also taking part in several major partnering initiatives (JTIs, PPPs, KICs…).

Brief description of the Centre/Research Group (including URL if applicable):

Interactive and Immersive Media (IIM) R&D Group is composed of several professors, researchers and Msc/PhD students, most of them belonging to Gandia Campus at the Polytechnic University of Valencia.Members and (national and international) collaborators of our group have background and experience in many areas: Telecommunications, Informatics, Electronics, Multimedia Systems, Quality of Service/Experience (QoS/E), Acoustics, Audiovisual Communications, Music Composition, 3D, Animation, UI Design, Media Art, Video Games, Mathematics, Marketing and Social Media.

Our research lines are:

-       Media Synchronization, in all its variants: Intra-Media Sync, Inter-Media Sync; Inter-Device Sync (IDES); Inter-Destination Media Sync (IDMS); and Hybrid Broadcast/Broadband Sync.

-       Distributed & Interactive Multimedia Systems (including QoS/E evaluation)

-       MulSeMedia: Multi-Sensorial Media experiences (with stimulation of all senses)

-       3D Virtual Reality (VR) immersive scenarios.

-       Multi-Touch Collaborative Screens.

-       Motion Capture (MOCAP) & Gesture Interaction.

We collaborate with other Universities, Research Centers from Spain and Europe, as well as with relevant Institutions and companies. We publish our research contributions in High-Impact Journals (IEEE COMMAG, Computer Networks, Multimedia Systems…) and top Conferences (ACM Multimedia, ACM MMSYS, IEEE LCN…) and contribute to the specification of Standards (e.g. IETF – RFC 7272 -, W3C, MPEG...).We also participate in research projects with relevant companies.

Project description:

Definition, implementation and objective/subjective assessment of media synchronization solutions for interactive and distributed Collaborative Virtual Environments, including multi-sensorial effects.

We are assisting to an exponentially rising of sales of Virtual Reality (VR) devices (expected to reach 18 million of sold units in 2017). Big companies, such as Facebook (Oculus Rift), HTC (Vive), Samsung (Gear VR) and Sony (Project Morpheus) are strongly investing in VR technology. Although the first expected use of VR was gaming, VR has many other interesting applications, such as films, collaborative work, virtual tourism, and learning/teaching (serious games).

VR devices immerse users in 3D virtual worlds, allowing them to feel as if they were in another place or world. It can be an isolated experience (e.g. a single-player game), but

more interestingly, the VR experience can also be shared with other remote users (e.g. networked multi-player games), users can be watching other users (or their avatars), interacting and collaborating with them to perform some activities (e.g. virtual tele-teaching or collaborative 3D modeling).

This project focuses on the latter. When several users interact inside the same VR world, the presentation of all the virtual objects, scenes and their related events should be perceived in a consistent, coherent and virtually synchronized way by all the users, providing an immersive, interactive and enjoyable experience. Otherwise, inconsistencies will occur turning into chaotic situations and a bad Quality of Experience (QoE). To ensure scalability and interactivity, advanced media synchronization solutions should be developed and evaluated (QoS and QoE) in different scenarios (e.g., tele-teaching, collaborative work…).

Applications

Candidates should provide:

- A complete CV, including the candidate's contributions (publications, participationin projects, experience in standardization, awards…).

- A motivation letter explaining why the candidate is interested in this position andhow the candidate can contribute to the IIM group's research lines (highlighting thecandidate's background and skills).

- Up to 3 Reference Letters from international researchers / professors.

Deadline: July 8, 2016 (to manifest interest)