Initial Report: 2015 UCL-France Workshop on virtual reality in rehabilitation, accessibility and mobility

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Overview

A workshop on "virtual reality in rehabilitation, accessibility and mobility", funded by the French Embassy, was held 21st -22nd May 2015 in Room 217, Chadwick Building, University College London. The original aims of the workshop were:

- To promote collaboration between UCL and a number of French institutions on topics of rehabilitation, accessibility and mobility, whilst considering the role virtual reality can play in these interrelated fields.
- To explore the possibilities of using virtual reality in two directions: first as a rehabilitation and learning tool and also as a design and evaluation tool for creating accessible spaces.
- To identify avenues of funding for future collaborative projects and/or researcher exchange programmes.

The workshop was attended by 7 academics from France and 5 from UCL:

- Dr Marie Babel, INSA Rennes, IRISA/Inria - Lagadic Team
- Dr Laurent Bougrain, LORIA (University of Lorraine/Inria/CNRS)
- Dr Tom Carlson, UCL
- Dr Sylvain Chevallier, University of Versailles St Quentin
- Dr Catherine Holloway, UCL
- Dr Evelyne Klinger, ESIEA (Laval)
- Dr Rui Loureiro, University College London
- Ms Temi Olugbade (representing Dr Nadia Berthouze), UCL
- Dr Isabelle Milleville-Pennel, IRCCyN, Nantes
- Dr Marie-Pierre Pacaux-Lemoine, University of Valenciennes
- Dr Chouki Sentouh, University of Valenciennes
- Prof Anthony Steed, UCL

The first day of the workshop began with 15min slots for each participant to introduce themselves with a quick presentation and Q&A. These were followed by a Post-It note research question brain-storming session, inspired by the EPSRC sandpit on AART. Discussions continued over dinner.

The second day of the workshop focussed on prioritising research questions that would be of mutual interest to several members of the group. This culminated in the generation of 5 high-level project descriptions with a few bullet points on each project. Each project was assigned a member of the workshop to take responsibility for organising the initial write-up and generating an action plan to take the project forward. As a break during the intensive second day Dr David Swapp showed us the UCL CAVE and discussed some possibilities for future collaboration relating to our project ideas.

Outcomes

We have set up a Google Drive folder to share our ideas and develop the 5 project ideas (the person in brackets is currently leading that proposal):

1. [Laurent] Could we work together on "determining intention" to better perform/control cognitive and motor tasks?
2. [Marie] How can knowing/sensing the human's affective states allow the machine to better adapt in shared control (or semi-automation)
3. [Marie-Pierre] How to get a model of the (wheelchair) user?
4. [Evelyne] How might we develop a low cost system targeting chronic pain at home?
5. [Sylvain] How could we standardise simulators and assessment to facilitate replication of experiments and data-sharing/comparison?

Not everyone is contributing to each project, but everyone is contributing to a minimum of one project and each project has at least one UCL member and one member from France. We have now collaboratively developed a 2-page summary for each proposal.

Follow-up Activities

It was impossible to find a date for the workshop that suited all the invited participants, so the following people are being kept in the loop about the developments and will contribute to (some of) the follow-up activities:

- Dr Nadia Berthouze, UCL
- Dr Sebastian Crutch, UCL
- Dr Angela Gall, RNOH
- Dr Franck Mars, IRCCyN, Nantes
- Dr Nick Ward, UCL

We are currently using Google Drive to aid our collaboration, but we will also develop a public facing website to provide a focal point for our community. Initially this will provide high-level information about the workshop and participants, but it will be updated to include details of the projects as they progress, as well as details of follow-up events.

As the proposals are developing, we are refining the membership of each team. By September, each project team will have identified a suitable scale for the project and a corresponding funding stream.

Additionally a number of smaller scale collaborations were identified between pairs of researchers that will lead to short-term student exchanges, e.g. Dr Tom Carlson and Dr Marie Babel (who did not know each other prior to the workshop) intend to exchange PhD students working on smart wheelchair control.

Finances

We are all very grateful to the French Embassy for financing this exciting workshop. The funds provided were used to reimburse the travel and subsistence of the French participants (1 night). They were also spent on lunch and refreshments for all workshop participants during the workshop and for the workshop dinner. Some funds were spent on printed materials, stationary and collaborative tools for the meeting. The final costs have not yet been calculated as we still collecting the receipts and not all the expense claims have yet been processed. The final finances will be included in the full report in September 2015.