PHD SCHOLARSHIP ON WEARABLE DISPLAY SYSTEMS FOR MULTIPLE-PROCESS MONITORING

Cognitive systems engineering/interaction design for biomedical systems
Cognitive Engineering Research Group (CERG)
The University of Queensland, Brisbane, Australia

BACKGROUND

In many healthcare contexts clinicians must monitor multiple work threads, including the well-being of multiple patients. Some examples are military medicine, mass casualty accidents, emergency response, and hospital acute care wards. In such situations, patient deteriorations have sometimes been overlooked, leading to serious consequences. In a new Australian Research Council (ARC) funded project, we are seeking novel and effective methods for helping clinicians manage multiple threads of patient care. Building on theory and observation, will create design prototypes and evaluate our ideas both in the laboratory and with stakeholders.

SCHOLARSHIP

We are offering an ARC-funded scholarship for a bright, motivated, well-organised graduate student to join our team and participate on the themes of the project. The PhD project can focus on either the technical aspects or the healthcare aspects of the project, or some combination of the two.

1. TECHNICAL-FOCUS SCHOLARSHIP

Candidates with a technical background would focus on developing innovative real-time multimedia systems that can be deployed on small wearable computing platforms, include head-worn technologies and video glasses with audio. Prior experience with one or more of iOS, Android, MatLab, and MAX/MSP development would be a plus, as well as Java programming experience. Candidates may have a background in electrical engineering, biomedical engineering, ubiquitous computing, interaction design with a technical orientation, or similar fields, and should enjoy working as part of a research team. Activities during the PhD may include some or all of the following: field work in multiple-patient environments; collaborating in design decision-making; doing technical development of visual, auditory, and tactile displays in advanced wearable media; performing engineering and software development work to create an evaluation environment; and the design, conduct, and analysis of display evaluations in laboratory and simulator contexts.

2. HEALTHCARE-FOCUS SCHOLARSHIP

Candidates with a healthcare background could be healthcare professionals wishing to work on an MPhil or PhD topic. A background in the design of medical electrical equipment or integration of clinical information systems would be an advantage, but not essential. Activities during the PhD may include some or all of the following: analysis of needs in different care contexts; collection of baseline data; collaborating in design decision-making; design, conduct, and analysis of simulator-based trials of display concepts.
STIPEND

ARC scholarship stipend: $29,844 living allowance for full-time study for 3 years (see conditions below).

Although our grant will cover the above stipend, candidates may also be competitive for UQ scholarships. We therefore require that candidates apply for UQ scholarships at the same time as applying for admission to UQ as a PhD student.

- **International** scholarship candidates will be expected to apply for the IPRS/UQI scholarships to cover their international tuition fees (the latter are not covered by ARC grant funds). **Deadline is 19 September 2014.**
- **Domestic** scholarship candidates will be expected to apply for the Australian Postgraduate Award scholarship and other appropriate scholarship schemes. **Deadline is 17 October 2014.**

Project leader Professor Penelope Sanderson can assist with procedural aspects of scholarship applications.

APPLICATIONS

For further information please contact Professor Penelope Sanderson, psanderson@itee.uq.edu.au. To make an expression of interest, please email us and send the following as soon as practical, so we can start discussions with you and judge your suitability for the project:

1. A current academic CV
2. Names and contact details of two academic referees
3. A copy of your academic transcripts (need not be official at this stage).

If you are selected to take part in the project, you will still need to be formally admitted as a PhD candidate at UQ. We will provide procedural help as you go through the PhD application and the further UQ scholarship application processes. As noted above, we will require that the selected applicant also apply for a UQ scholarship while applying for admission.

**Admission to PhD candidature at UQ is done on a rolling basis throughout the year. However there are only three UQ scholarship deadlines per year.**

UQ SCHOLARSHIPS

Information about domestic and international PhD scholarships at UQ is at the following websites:

http://www.uq.edu.au/grad-school/international-student-scholarships

PROJECT LEADERS

The research project is funded by an Australian Research Council (ARC) Grant (DP140101822) to Professor Penelope Sanderson at UQ, Dr Robert “Butch” Loeb at University of Arizona, and Dr David Liu at UQ.

FURTHER INFORMATION ABOUT CERG AT UQ

For further information about the Cognitive Engineering Research Group (CERG) at The University of Queensland, links to details of CERG personnel, plus prior CERG publications in areas related to head-worn technologies and auditory displays, see http://www.itee.uq.edu.au/cerg.