LUDWIG-
MAXIMILIANS-
UNIVERSITÄT
MÜNCHEN

FAKULTÄT FÜR MATHEMATIK, INFORMATIK UND STATISTIK
INSTITUT FÜR INFORMATIK
ARBEITSGRUPPEN MEDIENINFORMATIK UND
MENSCH-MASCHINE-INTERAKTION

Auslandsangebot Universität Glasgow

Möglichkeit des Auslandsaufenthalts

- Arbeit an einigen interessanten Projekten

- ca. 10 Wochen Aufenthalt

- 2,500 GPB => ca. 2800 Euro (Unterhaltskostenerstattung)

1. Using an iPad to touch and feel the micro-world via optical tweezers

- The optics group in the Department of Physics have just published the iPad control of their optical tweezers.

- Video: http://www.physics.gla.ac.uk/Optics/projects/tweezers/ipad.php

- The Computing Science team has developed model-based approaches to multimodal interaction which use real-time synthesis techniques to provide feedback in audio and vibration (http://www.dcs.gla.ac.uk/~jhw/shoogle/index.html) . This work has been licensed to Nokia, and is in phones on the market. Further work includes use of capacitive sensing to infer finger pose rather than just position We aim to combine this technical expertise in interface design to improve the end-user experience of controlling optical tweezers from a modified iPad, and to provide users with more insight about the qualitatively different nature of physical interactions at such scales.

- The student will have a computing science background, but will apply this to a LifeSciences project, hosted by Physics. Experience with iOS will be an advantage.

2. Sonifying social networks

- Social networks have changed the way people communicate. In an instant, short messages can be sent to a potentially huge audience. Within that audience a piece of information, a link to a video or blogpost can rapidly spread from person to person. People report not only their moods and daily activities, but also share rumours, news, pictures and movie clips.

- Because of the huge amount of information being shared and distributed in real-time through social feeds, it can be very hard for users to keep track of what is going on, with too many updates causing disturbance. This could be in the form of too many alerts indicating messages have arrived, which distract users, or requiring users to look at their devices often to see what is going on in their network, when their eyes need to be on their environment. Our solution is to present an ambient display of social feeds to allow users to gain a general overview of what is happening in their networks and also to spot a peak of activity within a particular feed. We do not try and present details (a user can look at the device for those) but to present an ambient multimodal display of more general information that can be attended to over time without disturbing the users. To make the display more ambient we will investigate tools of algorithmic composition and simple physical modelling.

- **For algorithmic composition ambient music will be created with events taken from the different social feeds as input to the music.**

- For physical modelling we will use the social feeds as input to the rich sound models. We have been developing a library of real-time audio synthesis algorithms which we can use to make the system respond appropriately when stimulated by different types of social network activity. The system essentially becomes an 'instrument' which is played by the collective actions of the social network participants. Individual members of the social network might have personally identifiable characteristics.

- This project will involve development of a sonification of social network activity, implemented on a Nokia N900 in python or using Qt. Students should be strong programmers, with mathematical inclinations

3. Brain Computer Interaction

- Glasgow is participating in the TOBI project on Brain-Computer Interaction.

- http://www.tobi-project.org/

3. Brain Computer Interaction

- Glasgow is participating in the TOBI project on Brain-Computer Interaction.

- http://www.tobi-project.org/

- There will be the opportunity for work on BCI applications such as music players. Students should be confident programmers.

4. Novel ways of exploring music playlist generation

- In collaboration with Syntonetic A/S we are exploring new ways of exploring music on both mobile devices and PCs. This project will explore music playlist applications (potentially including location aware, or use of the Microsoft Kinect). Students should be strong programmers. Work can be in Android, iOS or in Winamp plugins.

- http://www.moodagent.com/

Andere Themen

- Weitere Themen sind nach Absprache in folgenden Bereichen möglich
  - Capacity Sensing for Back-Of-Device Interaction
  - Microsoft Kinect basiert
  - HTML5 basiert