

Faculty Exchange Program – Fall 2012 – Final Report

Ian Oakley, Madeira Interactive Technologies Institute and University of Madeira

This report summarizes my visit to Carnegie Mellon University during Fall 2012. It is broken down into research, teaching and service activities.

Research: In collaboration with Professor Anind Dey of the Human-Computer Interaction Institute (HCII), I co-supervise Christian Koehler, a PhD student in Carnegie Mellon ECE. My visit allowed me to engage very closely with Christian's ongoing work on indoor location prediction. During our weekly meetings, we refined Christian's process and current research direction. He is currently conducting an extensive data analysis comparing the performance of a range of machine learning algorithms and analytic perspectives on both existing location data sets and one captured from participants in the Gates-Hillman Center at Carnegie Mellon. We are preparing a paper on this work for submission in spring 2013. I also continued a long-term collaboration with Professor Jason Hong of HCII in the area of novel security and authentication interfaces. Specifically, I was invited to advise two groups of his students and each group has submitted a conference paper on which I am a co-author. I also regularly attended a wide range of HCII research group meetings, including those of the Ubicomp Lab, the CHIMPS Lab and the Design Group. As part of this engagement, I was invited to give a talk on my work on unobservable authentication interfaces to the CHIMPS Lab. Finally, I also benefitted substantially from the rich academic environment at Carnegie Mellon. I particularly enjoyed attending talks from Rodney Brooks (robotics), Hugh Dubberly (design) and Ed Colgate (haptics).

Teaching: I taught "Thinking with Things" (48-730), a nine-unit class in the Computational Design Lab in the School of Architecture. A total of nine students attended, five undergraduates from Architecture, two masters students from Tangible Interaction Design and two masters students from Human-Computer Interaction. The course aimed to introduce students to both the theory and practice of physical computing. It involved lectures to introduce key topics, student-led seminars to flesh these out, tutorials to introduce basic technological building blocks and studio time to develop projects. The students were engaged and active throughout and it was a pleasure to develop and teach this class. I also met informally and frequently with other students and faculty in the CODE lab community, providing practical instruction and advice on interfacing with sensors, developing wireless communication protocols and other physical computing topics.

Service: I was invited to speak at the annual HCII town hall, an all hands meeting involving faculty, students and staff in which the achievements and challenges of the year are reviewed and recognized. I briefly presented Carnegie Mellon | Portugal and, specifically, the dual degree Professional Masters in Human Computer Interaction operated with the University of Madeira. I believe such public presentations do much to raise the profile of the international partnerships – putting faces to names – and hope they are enabled and encouraged in future iterations of the faculty exchange program. During my time at Carnegie Mellon, Professor Jodi Forlizzi of HCII also invited me to serve as an associate chair for ACM CHI 2013, the largest and most impactful conference in my field. This invite is at least partly attributable to the power of the relationships that can be built up through mobility initiatives like the faculty exchange program.

In sum, my visit to Carnegie Mellon allowed me to develop my research, refine my teaching and participate meaningfully in academic service. It was inspiring both practically and culturally and I strongly recommend the experience to other faculty members.