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I was given a golden opportunity to spend four months as an overseas research intern under the IDMI's Overseas Internship Attachment (HL OIA) program. During this period, I worked at the Music Computation and Cognition (MuCoaCo) Laboratory, Integrated Media Systems Centre (IMSC) at the University of Southern California (USC).

This overseas attachment was done under the supervision of Associate Professor Elaine Chew. The opportunity to work directly with Associate Professor Chew at the IMSC, provided me with very valuable research experience and enabled me to apply the knowledge to achieve my research goals.

The main objective of my PhD research is to create a rich and experiential visual display in real time, driven by live or digital music (or other sound sources). In order to achieve this objective, it is important to identify and extract time-

dependent musical features from both pre-recorded sound streams and live musical sound streams, the latter being particularly important and challenging. As the first assignment during the attachment, a pitch spelling algorithm described in [1] was implemented and subsequently this was combined with a key-finding algorithm proposed by Chew [2]. Different key-to-colour mapping strategies were implemented and an online survey was designed to find the best mapping strategy.

As part of my research, a survey was conducted in Singapore to find out what people with hearing difficulties might find useful in helping them to enjoy a concert, and the kind of images that would provide them with a better feel of the music. To add an international dimension to the study, the same survey was conducted at the National Centre on Deafness, California State University (CSUN).



Figure 1: During the visit to San Diego

It was an exciting experience to work in USC where learning/researching culture was very much different from NUS. Apart from academic work, I got the opportunity to travel around California especially in San Diego, Hollywood and Los Angeles. There were a lot of amazing sites to visit I hope my attachment would have helped strengthen inter-disciplinary research collaborations between NUS and IMSC, USC and have opened up more invaluable opportunities. I would always be grateful to IDMI for their support in this overseas research attachment program.

Reference

[1] Chew E. and Chen Y.-C., "Mapping MIDI to the spiral array: disambiguating pitch spellings," in Proceedings of the 8th INFORMS Computing Society Conference (ICS '03), pp. 259–275, Chandler, Ariz, USA, January 2003.

[2] Chew E., "Towards a mathematical model of tonality," Ph.D. dissertation, Operations Research Center, Massachusetts Institute of Technology, Cambridge, MA, 2000.