

Title: Travel Report on SPIE Defence and Security 2005 for IEEE-SA Comms & Signal Processing Chapter.

Subtitle: In the Land of Disney with Defence Scientist and Engineers.

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Summary: This report describes the SPIE 2005 Defence & Security Symposium from the point of view of IEEE member and PhD candidate Sebastien Wong

In March this year I attended the International Society for Optical Engineering Defence and Security Symposium 2005. Which is held on yearly basis, always starting on Easter Monday and running for five days. This is the biggest military flavoured electro-optic symposium, running 13 separate topic areas, each with dozens of different conferences. I had submitted my paper [1] to conference #5810, Acquisition, Tracking and Pointing; which sits under the topic area of Sensor Data Exploitation and Target Recognition. This conference had a single track and ran for one day. It covers the subject of optical tracking and has historically been used as a forum to describe the tracking systems and algorithms developed for missile seekers and satellite trackers.

My contribution to the conference was a paper advancing a class of tracking system initially proposed by John Fitts in the 1970s. John is famous with researchers in field for the development of the Fitts Correlation Tracker. The man passed away over a decade ago; however his legacy lives on in this conference. Many of the conference attendees personally knew of, and even attended the seminal paper presentation on correlation tracking by Fitts [2]. Indeed the session chair had worked on the development of the Fitts Correlation Tracker. It was to this audience that I was to present my paper; from the background discussion I knew I was in the right place to present this paper. However I was in awe of some of the participants, and my anxious anticipation built as I waited my turn to present.

My paper was the last of the session. In the end this turned out to be fortuitous, as the paper was well received and had numerous questions from the audience. The session chairs Steven Chodos now of Boeing and Gillian Groves of Raytheon invited me dinner. It was during dinner that I heard of Steven's exploits working with John Fitts on the original correlation tracker at what was then Hughes Aircraft Company. It was this personal interaction with senior Technical and Engineering Fellows that I found the most rewarding.

The rest of the symposium I spent hopping from one conference session to another to see all the key papers that interested me, as well as a couple that other people at work may have had an interest in. However the real treat of this conference is the exhibition hall. This is a massive event, where manufactures, would be manufactures, and technologists, demonstrated their latest products or prototypes. I saw a prototype two-colour focal plane array IR camera, the latest bits of missile warning kit from manufacturers, and lots of interesting electro-optic goodies.

The other key event of the Symposium is the dinner. This was well worth attending as the keynote presentation is given at this event. This year's presentation described the US vision for electro-optic research and disruptive technologies. One named technology was flexible thin film displays, the other was immersive simulation and

the third escaped my memory, possible because of the fine food and drink. However, I do remember seeing a video clip demonstration of a tank based tracking and directed fire system providing a hard-kill countermeasure to an incoming rocket propelled grenade. Now that is a much need technology.

I didn't have much time for site seeing as I had to leave before the end of the symposium, but I did manage to dig up some information from some of the conference regulars. I was told that Orlando was developed by Disney as a retreat and family community for his employees. Before Disney, the area was just a large swamp. Now the place is BIG. Physically all the building around the convention area, in Gaylord Palms, are huge monoliths. Gaylord Palms resort and convention centre, where the symposium was held, is one of the largest in the world. The architecture is oversized, with massive rendered columns and chandeliers. The rendering appeared to be the same substance used to make artificial rock commonly found in themes parks. The Disney stamp is everywhere, and of course there is Disney World just up the road.

Sebastien Wong

- [1] S. Wong, "Advanced Correlation Tracking of Objects in Cluttered Imagery," presented at Acquisition, Tracking, and Pointing XIX, Orlando, FL, USA, 2005.
- [2] J. M. Fitts, "Precision correlation tracking via optimal weighting functions," presented at the 18th IEEE Conference on Decision and Control Including the Symposium on Adaptive Processes, 1979.