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# Faculty Exchange Program report

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Institution:. .:Assistant Professor, University of Aveiro
Host.....:Raj Rajkumar, Department of Electrical and Computer Engineering , CMU
Period.....:May 1 to May 20 and May 30 to June 24

My visit was divided into two periods. The first one was mainly devoted to teaching activities, while the second one was devoted exclusively to research issues.

Regarding the teaching activities, I've been involved in the CMU ECE course 18-748 "Wireless Sensor Networks", taught by Prof. Raj Rajkumar. At the time of my arrival, the classes were nearing the end of the semester. My roles included participation in lectures and the evaluation of class project presentations and final demonstrations. There were 10 such unique and exciting projects, each with 3 students.

In terms of research activities, the work followed essentially the originally proposed plan, and focused on the use of the FTT technologies to new application domains, namely intra-vehicular communications. More specifically, during my second visit, a demonstrator that combines real-time video streams and control traffic with real-time guarantees was developed. An in-person live demonstration was carried out at the General Motors Research & Development Center in Detroit, Michigan. The demonstration was very successful and raised a significant interest on the GM staff, so there is a strong possibility for future cooperation with this company. In addition to the demonstrator development, we had also some brainstorming sessions to plan future joint research activities. During the second visit, it a joint paper to the 8$^{th}$ IEEE International Conference on Embedded Software and Systems was also submitted.

Globally, my visit to CMU was very fruitful. The demonstration carried out at the GM Research & Development Center opens extremely interesting perspectives in terms of industrialization of the FTT Ethernet switch technology. Also, several lines of joint work are open and should produce results in the near future.