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受入研究者(職・氏名): Dr. Paul Marshall
派遣期間: 2012 年 9 月 19 日 ～ 2012 年 11 月 23 日(67 日間)
派遣先での研究テーマ: Advanced Driver Assistance Systems in automobile and Human-Systems' mutual performance

【研究実施概要】

Since driving is already one of the research areas at University College London Interaction centre (UCLIC) so I didn't find any difficulty to continue my study of Advance Driver Assistance Systems (ADAS) and started working straight away. My second supervisor had conducted several studies regarding multi-tasking while driving using a driving simulator with his master course students. One of their past experimentations included Lane Departure Warning (LDW) System. I went through the whole experiment design, material and procedure. Taking this into consideration I suggested to run a study titled "Dual-task interleaving strategies using a Lane Departure Warning system while driving".

The original experiment program and design was lacking few convincing aspects for this investigation so I proposed some changes in the simulated driving environment, simulated vehicle speed etc which were discussed in detail and then implemented in the program code with the help of a computer science engineering student.

This study aimed to explore whether drivers rely on a Lane Departure Warning (LDW) system in a dynamic driving environment while performing a secondary task. The participants were asked to drive a simulated vehicle, which was equipped with Lane Departure Warning (LDW) system, for about half an hour over a number of separate trials at different speeds. They were also asked to respond to text messages using a touch screen keypad. Lane Departure Warning (LDW) system was used in some of the trials. The system alerted the driver of lane departure with a continuous beep until he/she returned back to the lane. The participants were told whether the LDW was on or off and the speed that they were driving at, at the beginning of each trial. During the driving tasks, they were asked to remain in the middle lane of the three-lane road at all time They have to answer all four text-messages for a trial to end. They were given a chance to practice the primary driving task and then the secondary text-messaging task before starting the actual trial.

An eye-tracking device was also used to track the eye movement of the subject during the task to see where he/she was looking. The device was calibrated with respect to each subject at the beginning of the session.

The logged data includes lateral position of the vehicle in the lane, steering angle,how frequently user accessed the secondary task, how long they visited and data entry performance during these visits.

The data is now under analysis.

【研究成果概要】

- The findings of this study will help us to understand how drivers might use LDW systems in stressful situations, which may have implications for the design of systems to be used in cars.

- The results will lead us to verify the usability and acceptance of ADAS.

- The research is focusing on the study of people and interactive phenomena. The study takes account of development of novel design solutions and methods for analyzing interactive systems, and thus to have a positive impact on society.

- A better understanding will greatly facilitate the design, prototyping and evaluation of new technologies in the context of how people actually use them in dynamic multitask contexts.

【外国語のスキルアップ・コミュニケーション能力の向上，海外におけるネットワークづくり】

The trip has really helped me enhancing my speaking/listening and communication skills.The people in the lab were from different parts of UK having different accents, but I didn't find much difficulty understanding them and talking to them. Usually post-docs and doctoral course students sit in the lab there, so it gave me an opportunity to talk to them about their research areas and backgrounds. I also got opportunity to introduce myself to some professors and associate professors in UCLIC. I met some visiting faculty and talked to them about my research which was a nice experience.

【派遣の感想】

I am really grateful to Japan Society for the Promotion of Science (JSPS) Institutional Program for Young Researchers for providing us with this great opportunity to explore the world. For allowing us to not only visualize and read that how other people are working and carrying out researches but to meet them and learn from them. ･The exchange of ideas and schemes have led to better understanding of domain problems and issues.

The program has served me as platform to enrich my expertise and has given me a deeper insight in the line of work to do creative design and development; needed by humanity.

This research activity has not only increased my knowledge , but has also improvd my research and communication skills which would enable me to accomplish my goals more appropriately.

I hope that JSPS keeps on giving this opportunity to the young researchers so that they can enlighten themselves with knowledge and wisdom.

Thanks once again.