

國立交通大學應用數學系

學術演講公告

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講 題：Smart Car

時 間：106 年 9 月 19 日(星期二) 下午 2:00 –3:00

地 點：(光復校區) 科學一館 223 室

茶 會：當天下午 1:30 (科學一館 205 室)

Abstract

In contrast to a traditional mechanical car, the Smart Car is a highly computerized automobile featuring ubiquitous computing, intuitive human-computer interaction and an open application platform. In this talk, we propose an advanced Smart Car demonstration platform with a transparent windshield display and various motion sensors where drivers can manipulate a variety of car-appropriate applications in augmented reality. Similar to smartphones, drivers can customize their Smart Car through free downloads of car-appropriate applications according to their needs. Additionally, three potential car-appropriate applications related to computer vision are investigated and implemented in our platform for increased driving safety. The first and second carappropriate applications aim to enhance the driving visual field by restoring the low-visibility scenes captured during inclement-weather or nighttime driving conditions to be high-visibility ones, respectively, and display them on a transparent windshield display. We also survey pedestrian tracking techniques that combine multiple driving recorders' information as a mobile surveillance network, including one proposed framework we have developed as the third car-appropriate application. By embedding these carappropriate applications, the Smart Car has the potential to increase safety of driving conditions both in daytime and nighttime, even in bad weather.

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