

## 特別講演

題目 : Self-organized remote monitoring using multiple vehicles

講師 : Dr. Stefan Byttner, Associate Professor, Halmstad University, Sweden

日時 : 2010年9月16日(木) 13:30 -

会場 : 首都大学東京日野キャンパス 2号館 301教室

言語 : 英語

参加費 : 無料

### 概要 :

The talk will describe the research that has been performed on remote monitoring of vehicles at Halmstad University. Work in this area has been done in cooperation with Volvo Technology since 2006.

Creating fault detection software for complex mechatronic systems (e.g. modern vehicles) is costly both in terms of engineer time and hardware resources. With the availability of wireless communication in vehicles, information can be transmitted from vehicles to allow historical or fleet comparisons. New networked applications can be created that, e.g., monitor if the behavior of a certain system in a vehicle deviates compared to the system behavior observed in a fleet. This allows a new approach to fault detection that can help reduce development costs of fault detection software and create vehicle individual service planning. The COSMO (Consensus Self-organized Modeling) methodology will be presented; the method is based on creating a compact representation of the data observed for a subsystem or component in a vehicle. This representation can be sent to a server in a backoffice and compared to similar representations from other vehicles. The backoffice server can collect representations from a single vehicle over time or from a fleet of vehicles to define a norm of the vehicle condition. The vehicle condition can then be monitored, looking for deviations from the norm. The method is demonstrated for both simulated data and measurements made on real vehicles, where it is able to detect cases of injected faults.

### 講師紹介 :

Stefan Byttner is an Associate Professor in Information Technology at Halmstad University in Sweden. He is the project leader of joint research projects between Halmstad University and Volvo Technology since 2006. He has a Ph.D. in Electrical Engineering (2005) from Chalmers University of Technology in Sweden. His current research interests are with distributed sensor systems, machine learning and artificial intelligence (especially self-organizing systems and collective intelligence).

### 連絡先 :

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