Connected Cars, Machine-to-Machine Environments, and Distributed Data Mining

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Abstract. Modern vehicles are embedded with varieties of sensors monitoring different functional components of the car and the driver behavior. With vehicles getting connected over wide-area wireless networks, many of these vehicle diagnostic-data along with location and accelerometer information are now accessible to a wider audience through wireless aftermarket devices. This data offer rich source of information about the vehicle and driver performance. Once this is combined with other contextual data about the car, environment, location, and the driver, it can offer exciting possibilities. Distributed data mining technology powered by onboard analysis of data is changing the face of such vehicle telematics applications for the consumer market, insurance industry, car repair chains and car OEMs. This talk will offer an overview of the market, emerging product-types, and identify some of the core technical challenges. It will describe how advanced data analysis has helped creating new innovative products and made them commercially successful. The talk will offer a perspective on the algorithmic issues and describe their practical significances. It will end with remarks on future directions of the field of Machine-to-Machine (M2M) sensor networks and how the next generation of researchers can play an important role in shaping that.