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How IoT and machine learning algorithms can change transport industry. An how we can participate in this process

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By the end of two thousand and twenties, almost eighty percent of all new vehicles will be sold with connectivity and automakers will make a tenth of their revenue from these services. In the context of rapidly evolving internet of things, the transport sphere is undergoing significant changes. Customer interest in car connectivity is increasing at a very high speed: over the past year, the share of customers willing to switch their car brand for better connectivity and to pay a subscription fee for the connected services has almost doubled. In some regions, for example China, more than sixty percent of respondents are willing to switch their car brand for the improved connectivity. Vehicles generate a great amount of data, which contains all the information about the vehicle itself, about surround, even about the driver. But, less than one percent of the gathered information is available for subsequent processing. Connectivity, allows us to significantly improve internal systems. By processing the gathered data, vehicle or service providers can optimize the operation parameters, find patterns, make predictions, reduce cost of ownership adapt and enhance vehicle systems for safety and better driving. Safety features can avoid collisions by taking over control of the vehicle. Adaptive features may automate lighting, provide adaptive cruise control, automate braking, incorporate GPS/traffic warnings, connect to smartphones, alert driver about other cars or dangers, keep the driver in the correct lane, or show what is in blind spots. Internet of things already became an essential part of these systems. Connectivity enables new functionalities, services. Now, vehicles should provide functionality, which has never been specific for them. From the one side it offers growth potential for vehicle providers, and from the other side it is an awesome opportunity for automotive industry newcomers. There are three main functions of any lane departure warning system, data collection, data processing, and the decision making. With new connectivity systems, we can overcome limitations of that system by developing a line departure warning system that does not rely on strong visual features, but use machine learning techniques to recognize the driving patterns that lead to unintended lane departure. The most recent and powerful machine learning technique that is used for pattern recognition is the support vector machine. Another example is predictive maintenance. Predicting future failures can be approached in many different ways. One approach is to monitor the equipment and detect patterns that signal an emerging fault. A more challenging one is to predict the remaining useful life. In the Area of failure type detection and predictive maintenance, the supervised learning technique is the most commonly used learning technique.