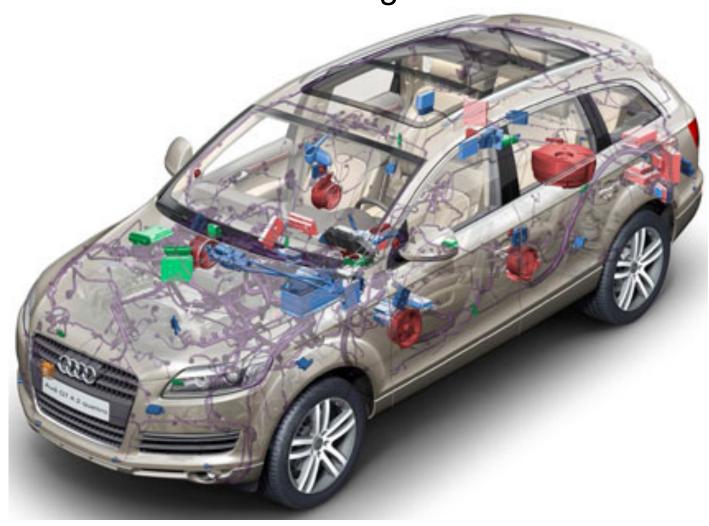# Security and Privacy Challenges in Smart Networks

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Network Services to Support Privacy-Preserving Learning?
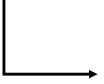

~100 ECUs and ~100 Sensors on Internal Buses, GBs/hr

Waymo Automatous Vehicle

Uber Self-Driving System

~2 million miles

Tesla AutoPilot

Nvidia Self-Driving System

RUTGERS

WINLAB

Phone & Laptop

Home security

Smart vehicle

Managing security for 1000 devices/ person?

Medical Devices

Smart appliances

ATM

Payment

Tracking Every Touch

User ID	Logging
001	Windows design
002	Front door design
001	Roof design
002	Roof coloring
001	Back yard design
002	Back door design
...	...

Associating user ID to collaboration activities

Challenges

- Services to support privacy-preserving, large-scale learning

- Low-complexity primitives to secure the increasingly software-defined network infrastructure?

- Managing security for 100-1000 of devices per person

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