Context Aware Automobiles
Context Recognition + Vehicles = ???
Context Recognition for Safety

- Hazard Detection
  - Collision Avoidance
Context Awareness for Utility

- Parking - AutoPark, Location, and Possible Fees
- Music Recommendation
Automotive Context-Awareness Today

- Stereo cameras, radar sensors, traffic data - can help with collision detection
- State of the vehicle and state of the user - sense potential danger
- Vehicle-to-vehicle communication and vehicle-to-center communication - better driving strategies and preventive measures
Were these cars examples of context-awareness?

- **No!** The previous examples were not *fully* context-aware
- A fully context-aware smart car would combine multiple sensors for richer assistance and safety
- A combination of sensing and monitoring:
  - The driver
  - The vehicle
  - Traffic/other vehicles
Technology for a Smart Car

![Diagram of a Smart Car's Technology](image)

**Fig. 1** General architecture of a smart car
Implementation Issues

- Accuracy - false negatives
- Feasibility - increases amount of overhead for more sensors
- Infrastructure - all cars need to have context awareness, but not all can support it
References

- Context-aware smart car: from model to prototype by Jie Sun, Zhao-hui Wu, Gang Pan
- AwareCar
  "https://www.kickstarter.com/projects/awarestack/awarecar-make-any-car-smarter-for-9"
- InCarMusic
- "https://link.springer.comchapter/10.1007/978-3-642-23014-1_8"