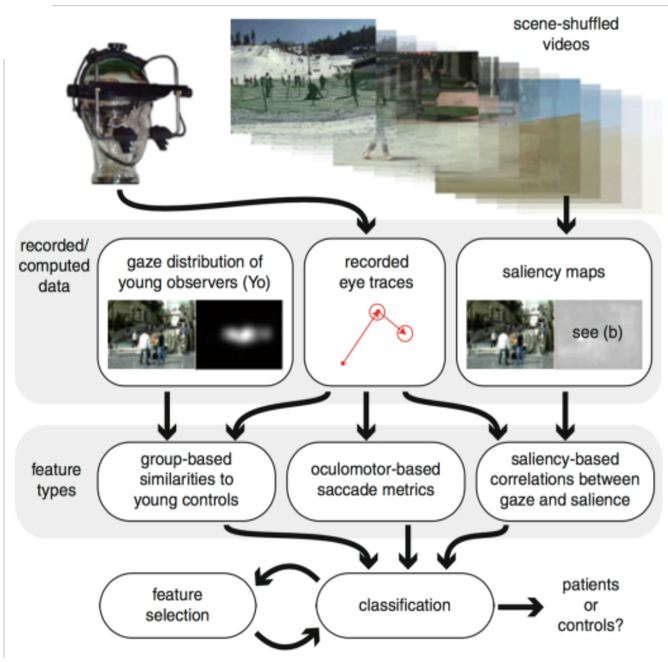
Adaptive Intelligence for Cyber-Physical Automotive Active Safety System Design and Evaluation

CPS Award #: 1544814 - Panagiotis Tsiotras (PI, Georgia Tech), Karen Feigh (Georgia Tech), Laurent Itti (USC)

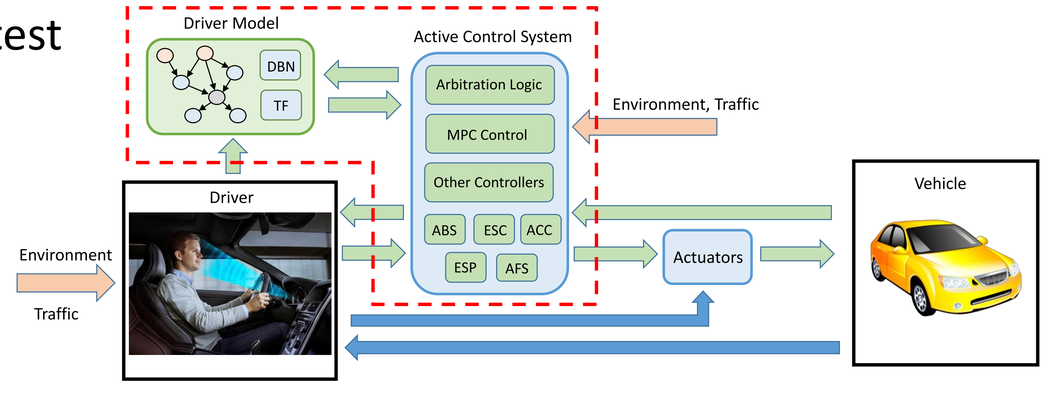
Challenge:

- Automotive driver assist systems (ADAS) do not take into account driver characteristics or traffic
- Improve ADAS by considering the interactions between driver-vehicle-ADAS
- Establish trust with autonomous vehicles



Solution:

- Model driver behavior from data
- Include driver model within the control loop
- Create simulation environment to test and validate the ADAS-human interactions



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Scientific Impact:

- Systematic approach to develop more "natural" behavior of automated and autonomous systems.
- Establish trust between humans and autonomy

Broader Impact:

- Safer ADAS and self-driving vehicles
- Who will care?
- VIP team has trained more than 60 undergraduate students in self-driving technology
- Better ADAS will decrease the 40,000 annual casualties from traffic accidents