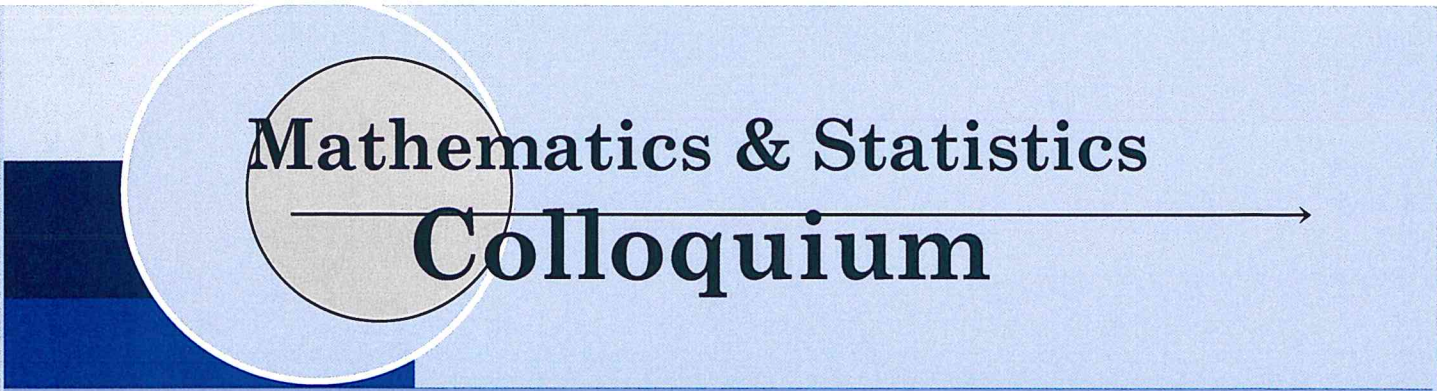




Mathematics & Statistics Colloquium

Thursday, April 03, 2014

2:30 P.M.— 3:50 P.M., MICK 107

Prof. Raul Rojas
Freie Universität Berlin
Dept. of Mathematics and Computer Science
Autonomous Cars for City Traffic

In my talk, I will describe the autonomous vehicles we have been developing in Berlin since 2006. Our car "MadeInGermany" was certified for city and highway traffic and has been navigating the Berlin streets since 2011-- fully automatically. I will review the sensor architecture and the hierarchy of embedded processors that makes it possible to control the car using just a laptop. The car uses a combination of radars, laser scanners, video cameras, and a GPS navigation unit. The sensor architecture is redundant. An independent processor supervises the control chain and provides additional safety. We are now focusing on being able to drive using only computer vision in the future. With this objective in mind, we have developed our own stereoscopic cameras, which are now also being used in large utility trucks in Berlin. The automotive industry is also starting to develop systems for highway autopilots. I will mention some projects and will discuss the still existing legal barriers, as well as the timetable of the German automotive industry.

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