Seminar announcement

Monday 24 March 2025, Time: 16:15 - 17:15
Room "Aula Seminari DIETI", Building 3, Floor 1, Via Claudio, 21 – NAPOLI

Prof. Peter Popov

City University London

Safety Assessment of Autonomous Vehicles: Approaches and Challenges

Abstract: The talk will provide an overview of safety assessment of autonomous vehicles (AV) based on Assurance 2.0. Concepts essential for AV safety assessment will be covered such as operational design domain (ODD) and road hazards. Some of the challenges in AV safety assessment due to the use of "intelligent" components built with Machine learning and Artificial Intelligence will be discussed briefly.

The talk will present two approaches to safety assessment: *i)* based on the use of Stochastic Activity Networks for modelling the road hazards and the impact of failures of perception system and safety monitors on AV safety, and *ii)* "driving to safety" based on univariate or multivariate Bayesian inference demonstrating their limitations. Challenges for AV safety assessment based on "scenario-based testing" will be covered, too.

Lecturer short bio: *Dr Peter Popov is Reader in Systems Dependability in the Centre for Software Reliability, City St George's, University of London, United Kingdom. He worked and consulted in the areas of computer and software dependability in several counties in Europe and in the USA, was a visiting scientist at the Coordinated Science Laboratory (CSL) at the University of Illinois at Urbana Champaign (USA), Duke University (USA), LAAS - CNRS in Toulouse, France, the University Federico II, in Naples, Italy and currently of the University of Florence, Italy.*

His research interests include dependability assessment of computer-based systems. He is known for his work on probabilistic modelling for dependability assessment, especially of fault tolerant software using "design diversity". His current research, which started as part of the Intel Collaborative Research Institute on Safe Automated Vehicles (ICRI-SAVe), is focused on probabilistic modelling for safety assessment of autonomous vehicles and on cyber-resilience of Connected and Autonomous Vehicles (CAVs)

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