

Dynamic Testing for the Verification of Autonomous Systems – Call for Participation

[Engineers' House](#), Bristol, 1-2 February 2018

The [Verification and Validation of Autonomous Systems EPSRC network](#) is hosting a workshop on “Dynamic Testing for the Verification of Autonomous Intelligent Systems” in Bristol on 1-2 February 2018. The workshop will be chaired by:

- Rob Alexander — University of York — Safety Engineering; Simulation-based Testing
- Rob Hierons — Brunel University London — Model-based Testing; Mutation Testing
- Kerstin Eder — University of Bristol — Trustworthy Systems, Verification & Validation for Safety in Robots at the Bristol Robotics Laboratory

The aim of the workshop is to develop links between communities (including structural testing, simulation-based testing, safety-critical testing and safety case construction, and formal methods) so that we can join forces in addressing the intellectual challenges that lead to safe and trustworthy autonomous systems.

The unifying theme will be verification in the broad sense - the process of gaining confidence that a system meets its specification. We will start from the premise that no single technique (or class of techniques) will be adequate on its own, and acknowledge that other network events have thoroughly covered formal V&V techniques. The workshop will therefore focus on how dynamic testing, specifically, can contribute to autonomous system verification.

Much of the workshop will be collaborative brainstorming and group-based development of research questions, supported by a series of stimulating invited talks by experts from the relevant communities.

Logistics

The workshop is funded by the network so there is no registration fee. Lunch and other refreshments will be provided, along with dinner on the evening of the 1st. Participants will need to make their own arrangements for accommodation.

Places are limited, so if you wish to attend please register ASAP at <https://www.eventbrite.com/e/dynamic-testing-for-the-verification-of-autonomous-systems-tickets-41947412841> — we need to confirm numbers with the venue ten days in advance, so will close registration at the end of Sunday 21 Jan.

If you have any questions, or have problems registering, please contact Rob Alexander — rob.alexander@york.ac.uk

Draft Schedule

Day 1 - Crystallizing the challenges we want to focus on

Our goal is not just to “identify the challenges”, but to identify a small subset that are relevant, interesting and plausibly tractable in near-term research projects by the workshop participants. By the end of the day, we plan to have a set of problems that (a) are reasonably well-defined and (b) that participants want to take on.

- 1030 Registration
- 1100 Scene-setting and overview - **Rob, Rob, and Kerstin**
- Introductions
- Talk 1: **Pete Thomas, Prof of Road & Vehicle Safety, University of Loughborough**
- Lunch with brainstorming
- Talks 2 & 3
 - *Stressing Complex Systems* — **John Clark, Professor of Computer and Information Security, University of Sheffield**
 - *The Challenges of V&V for Connected and Autonomous Vehicles* — **Siddartha Khastgir, Warwick Manufacturing Group, University of Warwick**
- Challenges - round table session
- Presentations by participants (coming out of round tables)
- Additional contributions - “open soapbox”
- 1730 General discussion and networking
- 1800 Close

- 2000 Dinner (venue tbc)

Day 2 - Identifying avenues of investigation

The goal for the end of the day is to have a set of avenues to solutions along with working groups to explore them.

- 0900 Talks 4 & 5
 - *Simulation for Robotics: RoboChart, RoboSim, and more* — **Ana Cavalcanti, Professor of Computer Science, University of York**
 - *Testing Robot Navigation in Virtual Worlds* — **Hélène Waeselynck, Directrice de Recherche, LAAS-CNRS**
- Group work on identifying avenues/directions and WACIs (wild and crazy ideas)
- Lunch with networking
- Summing up and next steps - **Rob, Rob, and Kerstin**
- 1530 End of formal programme, but discussions can continue (we have booked the venue until 1700)