

Assured Autonomy Workshop Report

Submitted by rodrigka on Wed, 01/06/2021 - 5:38pm

The [Computing Community Consortium \(CCC\)](#) released a report on assured autonomy, titled [Assured Autonomy: Path Toward Living With Autonomous Systems We Can Trust](#). The report is the result of a year-long effort by the CCC and over 100 members of the research community, led by [Ufuk Topcu](#) (The University of Texas at Austin). Workshop organizers included [Nadya Bliss](#) (Arizona State University and CCC), [Nancy Cooke](#) (Arizona State University), [Missy Cummings](#) (Duke University), [Ashley Llorens](#) (Johns Hopkins University, Applied Physics Laboratory), [Howard Shrobe](#) (Massachusetts Institute of Technology), and [Lenore Zuck](#) (University of Illinois at Chicago).

The following findings in the report outline the challenges and shortcomings that need to be addressed so that autonomy can sustainably fuel a long-lasting transformation.

- No good can come from autonomy without proper assurance.
- The goal of assured autonomy is human-centered -- to amplify, augment, enhance, and empower humans.
- Autonomous systems have a diverse set of vulnerabilities.
- Open operation environments amplify technical challenges.
- Assurance is context-dependent and not once-and-for-all.
- Assurance for autonomous systems requires a major re-think.
- Means for measuring the progress and characterizing the gaps are necessary.
- Autonomy is a socio-economic opportunity and challenge.
- The public will perceive and be affected by autonomy unevenly.
- The challenges in autonomy require interdisciplinary approaches.
- Strengthening connections between the stakeholders will accelerate progress.
- A re-envisioning of education and workforce development must be part of the path forward.
- A national research strategy for assurance is needed.

The following recommendations presented in the report build a vision for progress around a "network of institutes on autonomy" and briefly describe possible roles for the researchers, educators, and research sponsors.

The research community can contribute by...

- embracing the interdependency between the challenges; and
- developing a holistic view of these interdependent challenges.

The education and workforce development community can contribute by...

- aligning its priorities with the needs of the industry and government;
- focusing on establishing a foundation that will enable the students to acquire interdisciplinary skills; and
- broadening and diversifying the basis for qualified workforce in autonomy.

The envisioned network of institutes on autonomy should...

- enable interdisciplinary collaboration beyond what is possible today, including the disciplines that are currently considered to be peripheral;
- Increase the cultural and organizational connections between the academia, industry, and government agencies; and
- serve as an objective source of information to the public and the policymakers.

License: Creative Commons 2.5

Other available formats:

[Assured Autonomy Workshop Report](#)

Switch to normal viewerSwitch to experimental viewer



[Reports](#)