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ASME's Guide for Journal Authors

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ASCE-ASME *Journal of Risk and Uncertainty in Engineering Systems, Part B: Mechanical Engineering*

Special Issue on Autonomous Vehicle Technologies: Risk, Resilience, and Reliability (SI049B)

Unmanned aerial systems (UAS) or drone robotics have gained traction beyond military and agricultural uses, such as monitoring crop growth, irrigation, and assessing crop health. Self-driving cars are making strides in technical advancement, maneuvering regulatory barriers, and are gradually integrating into society. Intelligent underwater systems undertake autonomous missions in coordination with above-surface robots. User acceptance is put to the test in the adoption of fully autonomous transit systems. Autonomous systems in general must harmoniously integrate hardware, software, and humans while conforming to principles of safety, security, and reliability.

This Special Issue is aimed at gathering contributions that discuss new theoretical developments and advanced applications of risk, reliability, and uncertainty assessment to support the management of autonomous vehicle technologies. More specifically, the Special Issue is soliciting papers discussing traditional deterministic, probabilistic, machine learning, and hybrid approaches to risk assessment across all lifecycle events of autonomous technologies. Interpretation and insights gained from the implementation of risk-informed frameworks are also encouraged at various levels of maturity and discussion, from philosophical and ethical standpoints. An account of the data - and uncertainties around the collection of such data - required for successful assessments, along with novel solutions to encounter such challenges, is welcome. Predictive analytics towards prognostic health management, techno-economic analysis, and loss prevention of autonomously engineered systems are also of interest.

Topic Areas:

- Risks associated with autonomous vehicle technologies
- Reliability and resilience associated with intelligent control systems
- Comprehensive review of risk, reliability, and resilience of engineered autonomous systems
- Analysis and interpretation of uncertainties in the understanding of autonomous vehicle risks
- Risk management and loss prevention across all lifecycles of the engineering process
- The role of enabling technologies such as AI, deep learning, predictive analytics, IoT, and 5G
- Challenges in regulating design and operation of autonomous vehicles
- Authorities and industry collaboration challenges to close safety and security gaps
- Autonomous vehicle traffic safety and trajectory planning
- Identification of failure modes and determination of imprecise probabilities
- Development of use case scenarios to integration analysis and interpretation of observations
- Challenges in development and dissemination of standards

Publication Target Dates

Paper submission deadline	**March 1, 2021**
Initial review completed	**September 1, 2021**
Special Issue publication date	**April 30, 2022**

Submission Instructions

Papers should be submitted electronically to the journal at **journaltool.asme.org**. If you already have an account, log in as author and select **Submit Paper** at the bottom of the page. If you do not have an account, select **Submissions** and follow the steps. In either case, at the **Paper Submittal** page, select the **ASCE-ASME *Journal of Risk and Uncertainty in Engineering Systems, Part B: Mechanical Engineering*** and then in the Special Issue dropdown menu choose ***Autonomous Vehicle Technologies: Risk, Resilience, and Reliability (SI049B)***.
Papers received after the deadline or papers not selected for inclusion in the Special Issue may be accepted for publication in a regular issue.

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