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## CALL FOR PAPERS

### Submission Process & Deadlines

**June 16, 2024**

Full Paper Abstract, Short Paper Abstract, and Special Session Proposal Submission Deadline

**July 1, 2024**

Full paper Submission Deadline

**August 1, 2024**

Author Notification (Accept or Reject)

**September 1, 2024**

Final Paper Submission & Author Registration Deadline

We will regularly update the website with more specific information regarding paper submission and conference content.

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The **transportation industry** is in the middle of a transformation process through **digitalization** and **electrification** which is driven through new **technologies, standards and regulations**. The transfer of data and energy requires the intelligent interaction of vehicles with infrastructure and AI plays a key role to **automate vehicle operation** in a **sustainable and smart mobility ecosystem**. A major hurdle for automated vehicles is to manage the environmental complexity to move through traffic which is constrained through rules and highly dynamic stochastic processes and keep operational safety under control. Traditional vehicle development processes which were centered around human operated vehicles have to be replaced by new processes that consider machine operation. In order to make **machine operated driving** as safe or safer than human operated driving, new test and validation procedures in **cyberphysical test environments** need to be defined and standardized and anchored in **national and international regulatory frameworks**. Both people and goods transportation will benefit from the transformation towards a digital and sustainable mobility ecosystem through reductions of fatalities, injuries and health implications but also through efficiency gains such as less hours lost in traffic jams as well as prevention of **security related outages**. After a longer period of heavy investments in technology to develop **connected and automated vehicles**, it is now the time to consolidate those technologies through standardization and regulations, prepare and adapt the road, energy and digital infrastructure to deploy connected and automated vehicles services and to optimize and scale up **certification processes** for products and related infrastructure.

The **2024 IEEE IAVVC – International Automated Vehicle Validation Conference** – will be organized as an in-person event at one anchor location (Pittsburgh, Pennsylvania, USA) with a derived specific program focus on the respective geographical region. This event format will allow increased connectivity between researchers, industry experts, policymakers and standardization engineers to interact in a common framework and to share academic, industrial and regulatory insights leveraged by virtual and physical system demonstrations.

IAVVC is proposed as a lead event to promote the dialogue between academia, industry and regulators with respect to the development, testing and validation of automated vehicle solutions and their integration into digital and physical infrastructure. Industry innovations, results of academic research and new policy frameworks and standard developments are being discussed in context to inspire new product and process developments.

The conference focuses on all aspects related to research, development and applications of vehicle and infrastructure connectivity – both with focus on vehicle electrification and vehicle automation. Both full-length paper and abstract-only submissions will be accepted. The accepted papers presented at the conference will be published in the IAVVC 2024 proceedings and will be available on IEEE Xplore. Topics of interest include, but are not limited to:

- » V&V processes for automated vehicle development
- » V2X infrastructure development
- » X-in the loop testing in cyberphysical CAV testbeds
- » Regulatory frameworks for highly and fully automated vehicles
- » Next generation/AI-based vehicle perception and control systems
- » Software-defined vehicle and infrastructure system architectures
- » ADAS/AV operational risk assessment
- » New approaches for teleoperating and telemonitoring of CAVs
- » Data sharing and data communication protocols and assessment in context of ADAS/AV operation
- » Lifecycle management of software and hardware updates for CAVs
- » New methods to ensure compliance towards cybersecurity standards and regulations
- » AI-based traffic analysis and transportation system
- » Leveraging high performance computing for automated driving
- » New methodologies for CAV testing
- » Next generation methodologies for EV charging and V2G infrastructure
- » Validation of robotaxi fleet operation
- » New standards developments to enable automated vehicle and related infrastructure validation
- » Large Language Models for ADAS/AV, CAV, and vehicle validation
- » Foundation models for automated vehicle development
- » Generative AI for digital twin and simulation in AV development and testing
- » Data security and privacy in learning methods for AV and CAV
- » Equity and Fairness in AV and transportation accessibility
- » Safety and security in the context of autonomous vehicle and connected vehicle ecosystems
- » Safety of the Intended Functionality (SOTIF) in ADS and CAVS
- » Digitalization of Laws and Standards for ADS and CAVS