2025 IEEE/ACM 1st International Workshop on Software **Engineering for Autonomous Driving Systems (SE4ADS 2025)**

Ottawa, Ontario, Canada 29 April 2025



IEEE Catalog Number: CFP250O1-POD ISBN:

979-8-3315-3843-9

Copyright © 2025 by the Institute of Electrical and Electronics Engineers, Inc. All Rights Reserved

Copyright and Reprint Permissions: Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. All rights reserved.

*** This is a print representation of what appears in the IEEE Digital Library. Some format issues inherent in the e-media version may also appear in this print version.

 IEEE Catalog Number:
 CFP250O1-POD

 ISBN (Print-On-Demand):
 979-8-3315-3843-9

 ISBN (Online):
 979-8-3315-3842-2

Additional Copies of This Publication Are Available From:

Curran Associates, Inc 57 Morehouse Lane Red Hook, NY 12571 USA Phone: (845) 758-0400

Fax: (845) 758-2633 E-mail: curran@proceedin

E-mail: curran@proceedings.com Web: www.proceedings.com



2025 IEEE/ACM 1st International Workshop on Software Engineering for Autonomous Driving Systems (SE4ADS)

SE4ADS 2025

Table of Contents

Message from the Chairs Committees	
Session 1	
AI-Augmented Metamorphic Testing for Comprehensive Validation of Autonomous Vehicles Tony Zhang (University of Ottawa, Canada), Burak Kantarci (University of Ottawa, Canada), and Umair Siddique (reasonX Labs Inc., Canada)	1
Conflict-based Scenario Generation for Autonomous Driving System Validation Hua Qi (Kyushu University, Japan/The University of Tokyo, Japan), Siyuan Chen (The University of Tokyo, Japan), Fuyuan Zhang (The University of Tokyo, Japan), Tomoyuki TSUCHIYA (TIER IV, Japan), Michio HAYASHI (TIER IV North America, United States), Manabu OKADA (TIER IV, Japan), Lei Ma (The University of Tokyo, Japan/University of Alberta, Canada), and Jianjun Zhao (Kyushu University, Japan)	5
Deep Driving Workshop for Education and Training of Behaviour-Based End-to-End Learning Autonomous Driving Systems	12
Evaluating the Robustness of Uncertainty Quantification-Based Misbehavior Predictors for Autonomous Driving Systems: A Case Study	19

Moral Testing of Autonomous Driving Systems
Session 2
Realism Constructs for ADS Simulation Testing
Revolutionizing Validation and Verification: Explainable Testing Methodologies for Intelligent Automotive Decision-Making Systems
Scenario as Specification: Structuring the Development and Deployment of Automated Driving 38 Mohamed Essayed Bouzouraa (AUDI AG, Germany) and Sinan Hasirlioglu (AUDI AG, Germany)
Towards a Traffic Scenario Catalog for Collaborative Testing of Autonomous Vehicles
Towards Integrating Scenario-Based Requirements Engineering for Autonomous Vehicle Systems48 Amarachi Nwosu (Ontario Tech University, Canada) and Sanaa Alwidian (Ontario Tech University, Canada)
Author Index