Message from the Chairs

Ex-ASE 2025

We are delighted to welcome you to the proceedings of the 1st International Workshop on Explainable Automated Software Engineering (Ex-ASE) held in conjunction with the 40th IEEE/ACM International Conference on Automated Software Engineering (ASE 2025). This volume represents the shared vision and collective effort of a growing community dedicated to one of the most vital challenges of our time: ensuring that the automated systems we build are not only powerful and efficient, but also transparent, trustworthy, and fundamentally human-centric[1,2,3,4,5].

The motivation for Ex-ASE stems from a critical observation: the more we rely on automation to drive efficiency and scale in software development, the greater the risk of creating opaque, "black box" systems whose behavior is difficult for developers and users to understand, debug, verify or trust [7]. This challenge extends across the entire development lifecycle, from requirements and design to testing and deployment. Explainability is thus emerging not merely as a desirable feature, but as a foundational requirement for engineering responsible and human-centric systems [4]. It is the mechanism by which we bring humans back into the loop, empowering them as designers, analysts, and regulators who can critically assess and trust the automated tools they use [1,2,6]. The mission of Ex-ASE is to meet this challenge head-on, treating explainability not as an afterthought, but as a core principle of modern software engineering.

The enthusiasm for this vision was clearly reflected in the vibrant contributions to our workshop. We received 9 high-quality submissions from researchers across the globe. Following a rigorous peer-review process, our program committee selected 6 outstanding papers for publication. The final program featured 3 full papers, 2 short papers, and 1 tool demonstrations, showcasing a rich diversity of mature research and innovative ideas. We are proud to host a truly international event, with authors from Canada, China, Germany, Poland, South Korea, and the United States. The papers that form the core of this program address the workshop's theme from several critical perspectives:

Enhancing Developer Comprehension in Security and Quality Analysis

A prominent theme is the need to bridge the gap between complex automated analyses and developer understanding. These papers explore using new techniques like Large Language Models and visualization to translate abstract metrics and processes into actionable insights for developers.

- "Explaining Software Vulnerabilities with Large Language Models"
- "Explaining Code Risk in OSS: Towards LLM-Generated Fault Prediction Interpretations"
- "SEEDUI: Understanding Initial Seeds in Fuzzing"

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Strengthening the Foundations of AI Testing

Foundational challenges in testing AI systems are addressed by tackling the instability of widely used metrics to make the verification of neural networks more reliable and robust.

• "K-SNAC: Robust Neuron Coverage for OOD Generalization and Test Adequacy"

Tailoring Explanations for High-Stakes Domains

This theme focuses on extending explainability to specific and complex systems where understanding automation is critical, such as in cyber-physical systems and smart environments.

• "Explainability in Automated Cross-Domain Model-Driven Brake System Development"

• "From Facts to Foils: Designing and Evaluating Counterfactual Explanations for Smart Environments"

A successful workshop is a community effort, and we are filled with immense gratitude for everyone who dedicated their time and talent to making this event possible. Our heartfelt thanks go to the authors, who shared their most innovative work and laid the intellectual foundation for our discussions. The high quality of our technical program is a direct result of the meticulous and insightful work of our Program Committee. We extend our deepest appreciation to: Akhila Bairy, Andreas Vogelsang, Bhiman Kumar Baghel, İbrahim Kök, Kurt Schneider, Matteo Camilli, Matteo Rossi, Morgan Frank, Mostafa Karami, Nooshin Yousefzadeh, Patrick Ebel, Patrizia Scandurra, Raffaela Mirandola, Verena Klös, and Yixiao Li. Our sincere thanks also go to the organizers of ASE 2025 for providing an exceptional platform and their invaluable support.

The energy and collaborative spirit of this first workshop have convinced us that we are at the beginning of a crucial and exciting journey. The work presented here is more than just a snapshot of current research; it is a call to action. We hope this volume inspires new ideas, sparks future collaborations, and contributes to the shared goal of building a future where automation serves humanity with clarity and integrity.

We wish you an insightful and enjoyable read.

Sincerely,

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