

Message from the RAISE 2021 Chairs

The International Workshop on Realizing Artificial Intelligence Synergies in Software Engineering (RAISE) presents the state of the art in the crossover between Software Engineering and Artificial Intelligence. This workshop explores not only the application of AI techniques to SE problems but also the application of SE techniques to AI problems. Software has become critical for realising functions central to our society. Software is essential for financial and transport systems, energy generation and distribution systems, and safety-critical medical applications. Software development costs trillions of dollars each year yet, still, many of our software engineering methods remain mostly manual. If we can improve software production by smarter AI-based methods, even by small margins, then this would improve a critical component of the international infrastructure, while freeing up tens of billions of dollars for other tasks.

RAISE 2021 program is composed of one excellent keynote presentations and six papers with significant results that explored the intersection between AI and SE. Participants submitted contributions from one or more of the following perspectives:

- Improving SE through AI: including but not limited to knowledge acquisition, knowledge representation, reasoning, machine learning, machine-human interaction, planning and search, optimization, search-based algorithms, natural language understanding, problem solving and decision-making, understanding and automation of human cognitive tasks, AI programming languages, reasoning about uncertainty, new logics, statistical reasoning, software analytics.
- Applying AI to SE activities: including but not limited to requirements, design, software architecture, specification, traceability, program understanding, model-driven development, testing & quality assurance, domain-specific SE, adaptive systems, software evolution.
- SE for AI: including but not limited to AI programming languages, program derivation techniques in AI domains, platforms, software architectures, concurrency, rapid prototyping and scripting for AI techniques, software engineering infrastructure for reflective and self-sustaining systems.
- Deployed Applications of AI or SE: papers that describe a deployed SE application in the AI domain or an AI application in the SE domain including but not limited to robotics software development, recommendation systems, API learning, programming in natural language, speech interfaces, digital assistants, etc.

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