Workshop on Machine Learning in Software Engineering

1st Workshop on Machine Learning in Software Engineering (MLiSE 2021)

Software engineering (SE) is about methodologies and techniques for building high-quality software systems. However, modern software systems are becoming larger and more complex. Many of these systems are distributed and contain hundreds or even thousands of individual components that interact and communicate with each other through various interfaces. This not only complicates the process of software development, but also makes it more difficult and challenging to ensure their correctness and reliability.

On the other hand, recent advances and novel machine learning (ML) techniques deal with the development of methods that can automatically or semi-automatically infer models from data. Although, ML has already revolutionized numerous domains such as image recognition, translation, and healthcare, it is not yet extensively used in SE. The increasing demand and interest in SE to improve quality, reliability, cost-effectiveness, and the ability to solve complex problems has led researchers to explore the potential and applicability of ML in SE. For example, some emerging applications of ML for SE are source code generation from requirements, automatically proving the correctness of software specifications, and providing intelligent assistance to developers. Moreover, SE techniques and methodologies can be used to improve the ML process (SE for ML).The interest in ML in SE is evident from the exponential growth in the number of articles published on ML for SE in recent years.

The first international Workshop on Machine Learning in Software Engineering (MLiSE 2021) brought together the SE, ML, and data mining communities to work toward novel ML for SE methods, and their underlying assumptions and guarantees, to allow researchers, practitioners, and software engineers to identify and adopt the suitable ML methods to improve SE processes and software itself.

MLiSE 2021 was held online in conjunction with the European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases (ECML PKDD 2021). The 13 papers submitted to this workshop were evaluated using double-blind peer review by at least three reviewers. Based on the evaluation, a total of seven papers were accepted for presentation. Moreover, Zhi Jin from Peking University, China, accepted our invitation to give a keynote talk about "Deep learning enabled program understanding", as well as Atif Mashkoor from Johannes Kepler University who spoke about "The Relationship Between Machine Learning and Software Engineering Life Cycle Stages".

The organizers would like to thank the authors, keynote speakers, and Program Committee members for their contributions to the workshop.

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