



Using Artificial Intelligence to Improve Security in the Software Development Cycle: Techniques, Challenges and Opportunities

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Message from the Guest Editors

This Special Issue invites researchers to contribute their original research, methodologies, and case studies on the application of AI and ML algorithms in enhancing security. We encourage submissions related but not limited to the following broad areas:

- AI and ML to improve security in software development in general, including the software supply chains, addressing vulnerability detection, the identification of malicious code, and the prevention of supply chain attacks.
- The use of generative adversarial networks (GANs) in the software development cycle by contributing with novel GAN architectures, training methods, and evaluation metrics for improving security and the quality of software in general.
- The application of code generation and language models for tasks like automated code review, vulnerability detection, refactoring, program synthesis, and leveraging language models for security tasks.
- Challenges and opportunities of integrating the machine learning operations (ML-OPS) practices into the software development cycle. Topics include model versioning, reproducibility, scalability, and continuous integration and deployment.



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Message from the Editor-in-Chief

Algorithms are the core of computational mathematics and computer science. The whole area has been considered from different perspectives, which has led to the development of several sub-communities. The aim is to bring together researchers and practitioners from different areas of computational mathematics and computer science and to offer a platform for interdisciplinary applications in different areas of science and technology. In this way, *Algorithms* may become a forum for the exchange of new stimulating ideas between the different sub-communities working in the area of algorithms and their applications and the presentation of high-quality novel algorithmic approaches.

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