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

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Deadline for manuscript submissions:
31 July 2024

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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Special Issue

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Message from the Editor-in-Chief

Algorithms are the very core of Computer Science. The whole area has been considered from quite different perspectives, having led to the development of many sub-communities: Complexity theory (limitations), approximation or parameterized algorithms (types of problems), geometric algorithms (subject area), metaheuristics, algorithm engineering, medical imaging (applications), indicates the range of perspectives. Our journal welcomes submissions written from any of these perspectives, so that it may become a forum for exchange of ideas between the corresponding scientific subcommunities.

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