CALL FOR ARTICLES

AI AND SOFTWARE ENGINEERING: ARE WE READY?

The use of Artificial Intelligence (AI) is becoming ubiquitous in every walk of life from transportation to digital assistants. Software engineering is also benefiting from this rise of AI; however, the full potential has not been exploited so far. While testing is already a beneficiary of this rise, planning, modeling, design, and analysis phases are also catching up quickly. The current maturity of AI is ready to take software engineering to the next level. However, with great potential also come new challenges. Some of the important questions to be asked are:

❖ How AI will improve, accelerate, or disrupt the current practices of software engineering and vice versa?

❖ How AI will enable developers to write software that learn like humans?

❖ Will AI enable engineers to develop smart and intelligent applications or will it threaten their eventual existence because of the AI-created automatic software?

❖ How do we build explainable software models, how do we generate explanations from them, or even how might we evaluate explainability of those models?

❖ What could be the associated social, societal, legal, ethical, and environmental challenges for the technology spawned by the rise of AI?

DETAILS AND SUBMISSION LINK

https://www.computer.org/digital-library/magazines/co/call-for-papers-special-issue-on-ai-and-software-engineering-are-we-ready

This theme issue invites papers covering any aspect related to applications of AI in software engineering including, but not limited to,

❖ Explainable AI for software engineering

❖ AI for better requirements reasoning and refinement

❖ Software specification, verification, validation, testing and traceability

❖ Automated test case generation and prioritization

❖ Automated (or semi-automated) program repair

❖ Monitoring running systems (e.g., using anomaly detectors) or optimizing those systems (e.g., using search-based software engineering)

❖ Mining software repositories to learn predictive and quality models

❖ Automatic (or human-supported) configuration tools

❖ Planning, modeling and analysis

❖ Software architecture designs and decisions

❖ Man-machine interaction and machine to machine communication

❖ Human, social, societal, ethical, legal and environmental aspects

❖ Regulation and certification

❖ Case studies, experience reports, benchmarking, best practices, worst practices (e.g., war stories illustrating important anti-patterns), etc.

❖ New ideas, emerging results, vision papers, roadmaps, etc.

❖ Robotics, autonomous driving, NLP, digital assistants, recommendation systems, etc.

Guest editors of this theme issue particularly invite practitioners from industry to contribute as articles presenting results about industrial applications will be preferred and will be judged on their industrial impact.

TIMELINE
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QUESTIONS?
Contact the guest editors at co3-22@computer.org
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