

Special Issue Editor's Message

Software today plays a significant role in controlling the behavior of many systems, including mission- and safety-critical applications. A hazard caused directly or indirectly by software operation can have catastrophic consequences, including property damage, financial loss, and serious injury or death. Preventing such disasters from occurring is thus of paramount importance.

Yet the disappointing truths are that software is far from defect-free and that very large sums of money are spent each year only to fix and maintain defective software. In fact, it is estimated that more than 60% of the cost of software development is spent on testing and debugging. This situation has become even more challenging because not only is software becoming larger and more complicated, but the industry also suffers from tighter scheduling and budget requirements.

Thus, in order to produce dependable and trustworthy systems with reduced code, it is absolutely essential to develop advanced cutting-edge technologies that can assure software quality by incorporating cost-effective procedures and tools tailored to various scenarios.

This need for cutting-edge technologies is also the reason to have this issue dedicated to Software Quality Assurance. The first paper is “Intersecting Definitions of V&V” by Dr. Mark Paulk that provides in-depth review of what verification and validation are and their respective objectives. The second paper by Dr. Mehra Nouroz Borazjany discusses the performance testing of a real-world system and lessons learned from that project.

We would like to thank both authors for sharing their ideas and experiences on this important topic. Special thanks also go to Professor Shihpyng Shieh and his editorial team for all their support.

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