Welcome from the SEFAIAS 2018 Chairs

Autonomous systems have been a subject of computer science research for many years. Recent advances in hardware and in artificial intelligence have brought autonomous systems within the reach of product development. For example, most major carmakers are working on autonomous driving.

During the early years of autonomous systems research, the focus has been on making autonomous functionality possible in the first place. As we move closer to building end-user products, software engineering concerns are becoming at least equally important. Most conventional embedded software products are built on rule-based control engineering approaches. The corresponding software engineering practices are mature and well understood. For autonomous systems, however, the conventional control engineering approaches are extended by modern artificial intelligence techniques, in particular, machine learning. The corresponding product software engineering approaches are less well understood and need attention.

The 2018 ACM/IEEE 1st International Workshop on Software Engineering for AI in Autonomous Systems (SEFAIAS 2018) focuses on software engineering and software architecture approaches that achieve the usual software engineering goals, such as quality, maintainability, scalability, robustness, safety, etc., for systems that are built using a combination of conventional embedded software development and AI. Since many of the relevant techniques are just about to move from the research stage to the product development stage, many of the software engineering ideas and approaches will benefit from the typical "idea/work in progress" discussions that are enabled by this workshop.

We want to bring together researchers and practitioners to form a community that shares common interests in building robust autonomous systems. In particular, for the application domain of autonomous driving, our goal is to better understand the techniques necessary to verify and validate AI-based autonomous systems, ensure their robustness, safety, security, and other important system properties, in general. To this end, we have grouped three of the workshop contributions to form a special session on the verification of autonomous driving.

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