

Plenary Panel Session

Challenges and Recent Advances in Developing Trustworthy Software-Based Systems

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As software-based systems are in almost every aspect of our society and our daily lives, the trustworthiness of these systems has become increasingly important. Besides reliability, availability and survivability, trustworthy software-based systems should also simultaneously satisfy other important QoS properties, such as security, privacy, and situation-awareness. Trustworthy software-based systems are also expected to be adaptable and evolutionary so that they can always operate satisfactorily even when environments or requirements change.

It is very difficult to develop such systems primarily due to the following reasons:

- Software-based systems often consist of many components operating on various platforms and communicating through various network domains. The heterogeneity of operating environments and the complexity of interactions among components largely increase the difficulty of developing trustworthy software-based systems.
- Most research so far has focused on satisfying individual QoS properties, not satisfying multiple QoS properties simultaneously for software-based systems in heterogeneous distributed environments.

This panel will address various challenging issues to developing trustworthy software-based systems and discuss recent advances as well as potential approaches in dealing with them.