

Fault Injection Analysis for Automotive Safety and Security

Automotive semiconductors need to adhere to the strict Functional Safety standard, ISO 26262, which means meeting all the necessary metrics defined by this standard. Similarly, semiconductor chips for automotive (and multiple other segments), need to counter cyber-security attacks on them targeted to extract secret assets embedded inside these chips. Chip designers now need to implement safety mechanisms for Functional Safety and security countermeasure features for IC-security in their chips.

While determining the Safety Integrity Level for automotive semiconductor hardware, it's also important to consider how that failure can be influenced by adversaries by using the most common attack methodologies. Fault Injection in the ECUs has proven to be rampant amongst all the hackers to extract secret assets or get unauthorized access to the gateway ECU, to hack into the complete CAN bus. In this tutorial, we introduce a platform that can be used for both Security and Safety Fault injection analysis for automotive semiconductor verification.

Speaker:

Sesha Sai Kumar C.V.

Jamil Mazzawi

Ayman Mouallem