

Noémie Cohen : Formal verification of high-dimensional Machine Learning (ML) based systems

Deep learning is now a crucial tool for vision tasks and is being explored for critical safety systems in aviation, including runway detection during landings. This shift requires new design and software development approaches, challenging long-standing methodologies. Despite ongoing efforts to establish certification standards, there is a need for methods to prove the reliability of these machine learning systems. Formal methods, which use mathematical models, are promising, having already improved certification processes in past aerospace projects. However, adapting these methods to complex, high-dimensional tasks like runway detection remains a significant challenge.

