

SpeechPizza

Tuesday, 19 December 2023

12:00 - 13:00, D011

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Title: Towards a Multi-Agent Simulation of Cyber-attackers and Cyber-defenders Battles

Abstract: As cyber-attacks show to be more and more complex and coordinated, cyber-defenders strategy through multi-agent approaches could be key to tackle against cyber-attacks as close as entry points in a networked system. This paper presents a Markovian modeling and implementation through a simulator of fighting cyber-attacker agents and cyber-defender agents deployed on host network nodes. It aims to provide an experimental framework to implement realistically based coordinated cyber-attack scenarios while assessing cyber-defenders dynamic organizations. We abstracted network nodes by sets of properties including agents' ones. Actions applied by agents model how the network reacts depending in a given state and what properties are to change. Collective choice of the actions brings the whole environment closer or farther from respective cyber-attackers and cyber-defenders goals. Using the simulator, we implemented a realistically inspired scenario with several behavior implementation approaches for cyber-defenders and cyber-attackers.

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A literature review is an important part of a research project, but for it to be really constructive it needs to be thorough and fair. Systematic reviews are methodologies to achieve such goals. More specifically, the systematic mapping study methodology allows for a thorough and fair quantitative literature review. This talk will present the main principles of this methodology and relate the experience of going from start to finish through a literature review using it.

The science behind pizza!

