

Improving security and resilience of Cyber Physical Systems

Riccardo Orizio

Can we create a tool that can help Cyber Physical systems in detecting, identifying and correcting an anomaly whenever one would occur? Can it be used for time critical systems?

Our research method is experimental based. Currently we are working with simulation data but we hope to use some data from real systems scenarios.

So far these are the techniques that we were able to test: pure model based approach; a basic residual study approach; a basic and an improved version of the algebraic approach; data driven approaches. All of these techniques have been tested on simulated data and their results have been compared with each other trying to identify what can be considered the best approach, when possible.

In the near future we want to identify what are the best approaches to use in the diagnosis process on our simulation example and then extending it to a real data example. We are aiming in finding a set of data driven approaches which, alone or combined, can increase the diagnosis process performances.

I started my PhD course in April 2017 as a full time student in University College Cork under the supervision of professor Gregory Provan.