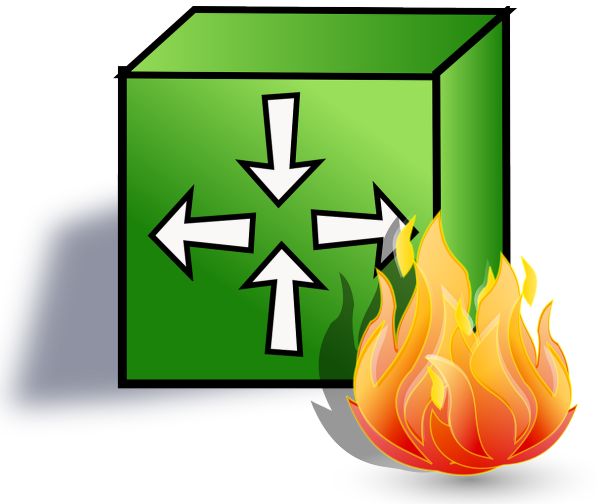
Thesis Proposal (MA)

Self-Learning Firewall for Smart Spaces

Outline

Smart Spaces are spaces with computing hardware that interfaces between the Cyber and the Physical World. Examples for such devices are remote controllable building control entities such as shutters, lighting, air conditioning, heating, ventilation, multimedia equipment, etc.
Attacking such devices is interesting in order to monitor users, to steal goods, or to harm users.
The control traffic of the described networked computing systems follows certain characteristics. The goal of this work is to design, implement and evaluate different machine learning techniques to create a self-learning firewall for Smart Spaces.



Possible Structure

- Analysis
  - Analyze the problem domain.
  - Identify relevant research questions that you will work on.
  - Present relevant technology.
- Related work
  - What do other projects do that answer your questions?
- Design
  - Which components do you need?
  - Which are options for the design? Why are your choices good?
- Implementation
  - Relevant details such as frameworks used.
- Evaluation
  - How well does it work?
    - Metrics!

Requirements

Curiosity, Joy to work in a team, Knowledge in Java.
Ability to write good code (including unit tests and documentation).

Contact

If you are interested, please send an email briefly explaining why you think to be the right person for this thesis to:
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Distributed Smart 2pace Orchestration System

ds2os.org/