Securing Intelligent Transportation Systems Against Spoofing Attacks: Spoofing Attack Simulation and Associated Metadata

Dataset available at: https://doi.org/10.5281/zenodo.5784783

(This dataset supports report **Securing Intelligent Transportation Systems against Spoofing Attacks**)

This U.S. Department of Transportation-funded dataset is preserved in the Zenodo Repository (https://zenodo.org/), and is available at https://doi.org/10.5281/zenodo.5784783

The related final report **Securing Intelligent Transportation Systems against Spoofing Attacks**, is available from the National Transportation Library's Digital Repository at https://rosap.ntl.bts.gov/view/dot/60558.

Metadata from the Zenodo Repository record:

Title: Securing Intelligent Transportation Systems Against Spoofing Attacks: Spoofing Attack Simulation and Associated Metadata

Author:

- Li Jin
- Qian Xie

Description:

This folder, produced from "Securing Intelligent Transportation Systems against Spoofing Attacks," with support from the C2SMART Center USDOT funded Tier 1 University Transportation Center, contains the following:

- parallel-queue & QueueSim: simulation of parallel queuing system with random failures
- Random Faults (2D): policy iteration for estimating optimal protecting policy of 2-queue system with random faults
- Random Faults (3D): policy iteration for estimating optimal protecting policy of 3-queue system with random faults
- Random Faults (heterogenous): policy iteration for estimating optimal protecting policy of 2-queue system with heterogenous service rates
- Security Game (2D): policy iteration for estimating equilibrium of 2-queue system with security failures
- Security Game (3D): policy iteration for estimating equilibrium of 3-queue system with security failures
- Q-iteration & Q-planning & Q-value iteration: reinforcement learning methods for estimating optimal protecting policy of parallel queuing system with random faults
- Q-planning Calc Cost: estimating the total cost of a particular protecting policy (optimal / always defend / never defend

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Keywords: Computer security, Game theory, Intelligent transportation systems, Intersections, Mobile applications, Queuing theory, Routing

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Dataset description:
This dataset contains 1 file collection and 1 file, described below.

Code.zip:

- Code Folder
  - .DS_Store
  - Q-iteration.py
  - Q-planning Calc Cost.py
  - Q-planning.py
  - Q-value iteration.py
  - QueueSim.py
  - Random Faults (2D).py
  - Random Faults (3D).py
  - Random Faults (>2D).py
  - Random Faults (heterogeneous).py
- __MACOSX Folder
  - Code Folder
    - ._.DS_Store
    - ._Q-iteration.py
    - ._Q-planning Calc Cost.py
    - ._Q-planning.py
    - ._Q-value iteration.py
    - ._QueueSim.py
    - ._Random Faults (2D).py
    - ._Random Faults (3D).py
    - ._Random Faults (>2D).py
    - ._Random Faults (heterogeneous).py

Readme.rtf:

File Type Descriptions:

- The .py file extension is commonly used for files containing source code written in Python programming language. Python is a dynamic object-oriented programming language that can be used for many kinds of software development (for more information on .py files and software, please visit https://www.file-extensions.org/py-file-extension).

- The .rtf file extension is used for documents written in Rich Text Format, a text format with some very basic formatting preserved, (for more information on rtf files and software, please visit https://www.file-extensions.org/rtf-file-extension).

National Transportation Library (NTL) Curation Note:
As this dataset is preserved in a repository outside U.S. DOT control, as allowed by the U.S. DOT's Public Access Plan (https://ntl.bts.gov/public-access) Section 7.4.2 Data, the NTL staff has performed ***NO*** additional curation actions on this dataset. NTL staff last accessed this dataset at https://doi.org/10.5281/zenodo.5784783 on 2022-05-18. If, in the future, you have trouble accessing this dataset at the host repository, please email NTLDataCurator@dot.gov describing your problem. NTL staff will do its best to assist you at that time.