Software Requirement Specification

Aditya Phadke
Mohit Kulkarni
Pranav Bhawalkar

The Problem

- The current system for malware detection uses signature based detection and classification of Malware which is blind to occurrences of new malware.

- To overcome this problem, various ML algorithms and Neural Networks are used; however the question remains which algorithm provides the most optimal solution.

Functional Specifications

- Scenarios
    - John Doe boots up his system.
    - A malware has infested John Doe boots up his system.
    - Our malware detection system detects the presence of the malware.
    - The presence of malware is reported to John.
    - John will decide the necessary action to be taken. (Keep or Delete the malicious file)
- System Overview
    - Our system will evaluate the performances of various Machine Learning algorithms and different Neural Networks for classification of malware.

Technical Specifications

- Hardware Requirements
  - A CPU with a multicore processor, at least dual core but quad core recommended.
  - A RAM of at least 8 GB but 16 GB recommended.

- Minimum Software Requirements
  - Python 2.7/Python 3.3
  - NumPy 1.8.2 and SciPy 0.13.3
  - Machine Learning libraries: Scikit-learn, Eli5
  - Deep learning libraries: Tensorflow/Theano/Keras

- Additional Software requirements for GPU enabled learning
  - NVIDIA CUDA Toolkit 8.0
  - cuDNN v5.1

External Specifications

- Recommended External Requirements :
  - NVIDIA GPU GTX 980, 1050Ti.

- Minimum External Requirements :
  - NVIDIA GPU GTX 940.

- Interaction :
  - Deep learning libraries perform GPU enabled learning using the GPUs through NVIDIA, CUDA Toolkit, cuDNN.

Thank You !