

# Eric Nunes

## Curriculum vitae

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### EDUCATION

2014 – PRESENT **Arizona State University**  
*Ph.D. Computer Engineering*  
GPA: 4.0/4.0

2012 **Syracuse University**  
*M.S. Electrical Engineering*

2010 **University of Mumbai**  
*B.E. Electronics*

### WORK EXPERIENCE

Current

#### Data Scientist – Intellispyre Inc.

- Designing a system to mine and store data from darknet markets and forums.
- Implementing learning models to classify data related to malicious hacking (from products on markets and topics on forums).
- Developing data analysis tools to draw meaningful insights from the gathered data (including detection of 0-day exploits, identifying exploits targeting specific vulnerabilities, identifying trends in the cyber threat landscape etc.).

Summer 2016

#### Research Consultant – SiteLock

- Analyzed large dataset of malicious web scripts (PHP/HTML) to generate features indicative of malicious activity.
- Developed models to classify web scripts as malicious or not using the generated features.
- Reported the performance of the trained model overtime and analyzed the classification errors for further improvement.
- **Achieved malicious script detection rate of >90%.**

### RESEARCH EXPERIENCE

#### CySIS Lab (Arizona State University)

**Adviser:** Dr. Paulo Shakarian

*August 2014 – present*

*Tools: Python, PostgreSQL, Prolog.*

1. *Cyber-attribution:* Identifying cyber adversaries using argumentation and machine learning models (knowledge base: 10 million attacks).
2. *Proactive Cyber-threat Intelligence:* Built a system to crawl and parse the Darknet (markets and forums) to extract cyber threat intelligence including zero-day exploits using data

mining and machine learning techniques (collecting 305 threats a week).

3. *Malware task identification:* Identifying the tasks that a piece of malware was designed to perform on the system (adversarial intent) using cognitive models.

#### Brain Engineering Lab (Dartmouth College)

*June 2012 – July 2014*

*Tools: MATLAB, C++, OpenCV.*

Learning representations for Object recognition and localization in image and video using biologically inspired algorithms.

#### SUNY Upstate medical University

*June 2011 – May 2012*

*Tools: MATLAB.*

Developing image processing algorithms to analyze brain and retinal images.

### PATENTS/LICENSE

1. Systems and Methods for Data Driven Malware Task Identification. Submitted, 2016. **Provisional: 62/182,006. Selected for Tech-Connect 2016 Innovation Showcase.**
2. Intelligent darkweb crawling infrastructure for cyber threat intelligence collection. Licensed to Intellispyre Inc. **Provisional: 62/409,291. Technology featured in Forbes, MIT Tech Review, ACM TechNews, Cisco Continuum.**

### TECHNICAL SKILLS

#### Machine learning:

Classification, regression, clustering, anomaly detection, feature engineering, online learning, scikit-learn, basic experience with deep learning (Theano and Caffe).

#### Programming:

Python, MATLAB, C++, SQL, Prolog, HTML, OpenCV, Theano, PostgreSQL, Weka,  $\text{\LaTeX}$ , Windows, UNIX, SVN, Git, Photoshop. Familiar with C, PHP, LISP, R, Caffe.

### SELECTED COURSEWORK

Statistical Machine Learning, Data Mining, Semantic Web Mining, Artificial Intelligence, Optimization, Information Assurance, Network Security.

### PUBLICATIONS

<https://efnunes.github.io/publication.html>