

# Eric Nunes

## Curriculum vitae

**OBJECTIVE:** Use-inspired technology development for real world applications using artificial intelligence / machine learning techniques.

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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.S. Electronics*

### WORK EXPERIENCE

June 2016 – August 2016

#### Research Consultant – SiteLock

Job duties included analyzing malicious web scripts (PHP/HTML) to engineer features to train machine learning models to detect malicious scripts and highlight malicious part of the code.

**Achieved accuracy of >90%.**

### RESEARCH PROJECTS

#### 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.

### SELECTED PUBLICATIONS

1. **E. Nunes**, A. Diab, A. Gunn, E. Marin, V. Mishra, V. Paliath, J. Robertson, J. Shakarian, A. Thart, P. Shakarian. "Darknet and Deepnet Mining for Proactive Cybersecurity Threat Intelligence". IEEE ISI, 2016.
2. **E.Nunes**, P.Shakarian, G. Simari, A.Ruef. "Argumentation Models for Cyber Attribution". IEEE/ACM International Symposium on Foundations of Open Source Intelligence and Security Informatics (FOSINT-SI) 2016. **Best Paper Award.**
3. **E. Nunes**, P. Shakarian, G. Simari. "Toward Argumentation-Based Cyber-attribution". AAAI 2016 Workshop on Cyber security.
4. **E.Nunes**, C.Buto, P.Shakarian C.Lebiere, S. Bennati, R.Thomson, H.Jaenisch. "Malware Task Identification: A Data Driven Approach". IEEE/ACM FOSINT-SI, 2015.
5. **E.Nunes**, N.Kulkarni, P.Shakarian, A.Ruef, J. Little. "Cyber-Deception and Attribution in Capture-the-Flag Exercises". IEEE/ACM FOSINT-SI, 2015.

### PATENTS/LICENSE

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

### SOFTWARE SKILLS

EXPERIENCED Python, MATLAB, C++, SQL, Prolog, HTML, OpenCV, Theano, PostgreSQL, Weka,  $\text{\LaTeX}$ , Windows, UNIX, SVN, Git, Photoshop.

FAMILIAR C, LISP, R, Theano, Caffe.

### SELECTED COURSEWORK

**Graduate:** Statistical Machine Learning, Data Mining, Semantic Web Mining, Artificial Intelligence, Optimization, Information Assurance.