

John J. Seymour, III

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410-350-4877

RESEARCH INTERESTS: Machine Learning, Malware Analysis

EDUCATION

University of Maryland, Baltimore County (UMBC)

Ph.D. in Computer Science (Expected Fall 2017)

Graduate GPA: 4.0/4.0

M.S. in Computer Science (Fall 2014)

Thesis Title: Quantum Classification of Malware

B.S./B.S./B.A. *cum laude* in Computer Science/Mathematics/Philosophy (Fall 2011)

Undergraduate GPA: 3.70/4.00, Certificate of General Honors

WORK EXPERIENCE

ZeroFOX

Senior Data Scientist, September 2016 - Present

- Piloted ZeroFOX FoxThreats program for threat hunting on social media.
- Conveyed complex machine learning concepts to press and conference attendees.
- Interviewed and mentored new hires.

Data Scientist, September 2015 - September 2016

- Led development of SNAP_R, a machine learning based pen-testing tool to automate generation of individually tailored phishing messages on Twitter.
- Developed solution to detect money-flipping scam posts on Instagram.
- Created high-quality datasets for product offerings.

CyberPoint International, LLC

Student Intern, Summer 2015

- Kaggle Malware Competition models and compared to models in the CyberPoint Machine Learning Model Training Pipeline.
- Added the Python xgboost library and the t-SNE dimensionality reduction algorithm to the Model Training Pipeline.
- Created algorithm and data structure vulnerabilities for DARPA STAC competition.

University of Maryland, Baltimore County

Graduate Research Assistant, UMBC DREAM Lab, January 2014 - May 2015

- Scraped urlquery.net for links to websites redirecting to exploit kits.
- Intercepted and recorded traffic to exploit kit landing pages for use in data analysis.

Graduate Teaching Assistant, August 2012 - December 2013

- Teaching Assistant for Network Security, Computer Security, Cryptography, Automata Theory, and Introduction to Object-Oriented Programming.
- Taught Metasploit, Kali Linux, and infosec theory to undergraduate students.

Graduate Research Assistant, UMBC Cyber Defense Lab, January 2012 - August 2013

- Designed, tested, deployed, and maintained LAMP stack to host government-funded gamification initiative for teaching high school students basic concepts in infosec.

Army Research Lab

Student Intern, Summer 2014

- Transformed satisfiability problems into problems the D-Wave SR10V6 could solve.
- Demonstrated and reduced bias in D-Wave chips using statistical techniques.

Pyxis Engineering/Applied Signals Technology

Associate Engineer, June 2009 - January 2010

- Designed, tested, and deployed a Training Request Management System using Java, Spring, HTML, CSS, Javascript, JUnit, MySQL, Apache Maven, and Apache Tomcat.

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PUBLICATIONS

- John Seymour and Charles Nicholas, “How to build a malware classifier [that doesnt suck on real-world data]”, SecTor, October 2016.
- John Seymour and Charles Nicholas, “How to build a malware classifier [that doesnt suck on real-world data]”, Data Science MD Meetup, October 2016.
- BBC Tech Article?
- the Atlantic Article?
- John Seymour and Philip Tully, “Weaponizing Data Science for Social Engineering: Automated E2E Spear Phishing on Twitter”, DEF CON 24, August 2016.
- John Seymour and Philip Tully, “Weaponizing Data Science for Social Engineering: Automated E2E Spear Phishing on Twitter”, Black Hat USA, August 2016.
- John Seymour and Charles Nicholas, “Labeling the VirusShare Corpus: Lessons Learned”, BSidesLV, August 2016.
- John Seymour and Charles Nicholas, “Labeling the VirusShare Corpus: Lessons Learned”, SPARSA South, July 2016.
- John Seymour and Philip Tully, “Weaponizing Data Science for Social Engineering: Automated E2E Spear Phishing on Twitter”, BaltimorePython Meetup, July 2016.
- Forbes article?
- John Seymour and Charles Nicholas, “Labeling the VirusShare Corpus: Lessons Learned”, BaltimorePython Meetup, June 2016.
- Alan T. Sherman, John Seymour, Akshayraj Kore and William Newton, “Chaum’s protocol for detecting man-in-the-middle: Explanation, demonstration, and timing studies for a text-messaging scenario”, Cryptologia, May 2016.
- John Seymour and Charles Nicholas, “An Introduction to Malware Classification”, BSidesCharm, April 2016.
- John Seymour and Charles Nicholas, “Quantum” Classification of Malware, DEF CON 23, August 2015.
- John Seymour and Charles Nicholas, “Quantum” Classification of Malware, CyberPoint International, July 2015.
- John Seymour and Charles Nicholas, “Quantum” Classification of Malware, UMBC DREAM Lab, July 2015.
- John Seymour and Charles Nicholas, Overgeneralization in Malware Classification, CyberPoint International, July 2015.
- John Seymour and Charles Nicholas, “Overgeneralization in Malware Classification”, Malware Technical Exchange Meeting, June 2015. (poster session)
- John Seymour, “Overgeneralization in Feature Set Selection for Classification of Malware”, CSEE Technical Report TR-CS-14-06, August 2014.
- John Seymour, “Skew Removal from SAT Instances using the D-Wave Quantum Annealer”, Army Research Laboratory, July 31.
- Charles Nicholas, Robert Brandon, Joshua Domangue, Andrew Hallemeyer, Peter Olsen, Alison Pfannenstien and John Seymour, “The Exploit Kit Club”, Malware Technical Exchange Meeting, July 22-24, 2014, Albuquerque, NM. (poster session)
- Charles Nicholas, Robert Brandon, Andrew Coates, Andrew Hallemeyer, Brian Hillsley, Victoria Lentz, Edward Mukasey, Peter Olsen, Alison Pfannenstien and John Seymour, “Tracking Exploit Kit Activity Through Landing Page Analysis”, UMBC Computer Science and Electrical Engineering Department Technical Report 14-005, May 7, 2014.
- John Seymour, Joseph Tuzo, and Marie desJardins, “Ant Colony Optimization in a Changing Environment,” Working Notes of the AAAI Fall Symposium on Complex Adaptive Systems, November 2011.
- Joseph Tuzo, John Seymour and Marie desJardins, “Using a Cellular Automaton Simulation to Determine an Optimal Lane Changing Strategy on a Multi-lane Highway,” Working Notes of the AAAI Fall Symposium on Complex Adaptive Systems, November 2011.

AFFILIATIONS

Admin for Baltimore Python SPARSA South MD Data Science Technical Consultant for the
UMBC Ethics Bowl Team [\[link\]](#) Judge for Code SLAM [\[link\]](#)