John J. Seymour, III

seymour1@umbc.edu 410-350-4877

Research Interests Malware Analysis, Machine Learning, Quantum Computing

Education

University of Maryland, Baltimore County (UMBC)

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

Graduate GPA: 4.0/4.0

M.S. in Computer Science (Fall 2014)

Thesis Title: Quantum Classification of Malware

B.S. *cum laude* in Computer Science (Fall 2011)

B.S. *cum laude* in Mathematics (Fall 2011)

B.A. *cum laude* in Philosophy (Fall 2011)

Certificate of General Honors

Undergraduate GPA: 3.70/4.00

Publications

John Seymour and Charles Nicholas, ""Quantum" Classification of Malware", to be presented by John Seymour at DEFCON 23, August 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 and Radhakrishnan Balu, "Skew Removal from SAT Instances using the D-Wave Quantum Annealer", Army Research Laboratory, July 31. Presented by John Seymour.

Charles Nicholas, Robert Brandon, Joshua Domangue, Andrew Hallemeyer, Peter Olsen, Alison Pfannenstein 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 Pfannenstein 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. Presented by John Seymour.

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.

Work Experience

CyberPoint International, LLC

Student Intern, Summer 2015

- Created multiple Java programs with various algorithms and data structures for use in the DARPA Space/Time Analysis for Cybersecurity project.
- Recreated the top Kaggle Malware Competition models and added multiple machine learning algorithms to the CyberPoint Machine Learning Model Training Pipeline.

Army Research Lab

Student Intern, Summer 2014

- Researched skew in the D-Wave SR10V6 using satisfiability problems.
- Demonstrated and reduced bias using statistical techniques.

University of Maryland, Baltimore County

Graduate Research Assistant, UMBC DREAM Lab, January 2014-Present

- Created Bash Scripts and Cron jobs to scrape urlquery.net for links to websites redirecting to exploit kits.
- Integrated VirtualBox, Wireshark, Bash and Python scripts, and Suricata to intercept and record all traffic to exploit kit landing pages.

Graduate Teaching Assistant, August 2012 - December 2013

- Teaching Assistant for Network Security, Computer Security, Cryptography, Automata Theory, and Introduction to Object-Oriented Programming.
- Introduced students to Metasploit/Kali Linux and theoretical aspects of cybersecurity.

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

- Designed, tested, deployed, and maintained the SecurityEmpire website and game.
- Administered Mercurial repository, managed Red Hat server with Apache HTTPD to host project, and developed server-side code using PHP and MySQL.
- Managed undergraduate graphic designers and programmers and assisted with HTML, CSS, and Javascript with AJAX.

Pyxis Engineering/Applied Signals Technology

Associate Engineer, June 2009 - January 2010

- Designed, tested, and deployed a Training Request Management System.
- Synthesized Java, Spring Web MVC framework, HTML, CSS, Javascript, JUnit, MySQL, Apache Maven, and Apache Tomcat.
- Utilized Agile development process.

Study Abroad

University of Bristol, UK, Spring 2010

Applied and was accepted into University of Bristol's Mathematics department through direct enrollment. Successfully completed maximum number of credit points (60) of senior course equivalents, including Computational Complexity, Quantum Mechanics, Mathematical Logic, and Algebraic Number Theory.

Honors and Awards

President's List (4.0 GPA): Spring-Summer 2009, Summer 2010-Present
Eagle Scout, Boy Scouts of America

Affiliations

Technological Associations: IEEE, ACM, AAAS
UMBC Alumni Association
UMBC Honors College
Omicron Delta Kappa, a National Leadership Honor Society
Pi Mu Epsilon, a Mathematics Honors Fraternity
United States Fencing Association
National Eagle Scout Association