Christopher Theisen

Research Assistant - Department of Computer Science
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Industrial Experience

Current: **North Carolina State University** – PhD in Computer Science: Expected 2017

- Current Research: *Risk-Based Attack Surface Approximation*
- Advisor: Dr. Laurie Williams

North Carolina State University – M.S. in Computer Science: 2016 – GPA: 3.87

- Thesis: *Automated Attack Surface Approximation*

University of Cincinnati – B.S. in Computer Science: 2010 – GPA: 3.7

- Senior design project: a ranking, sorting, and categorization system for Twitter.

Academic Experience

North Carolina State University

Research Experience for Undergraduates (REU) Student Mentorship – Summer 2016

- Mentoring undergraduate student during their first research experience in academia

Teaching Assistant – Software Security – Fall 2013, Fall 2014

- Designed multiple penetration testing and secure design assignments for the class.
- Lectured on multiple occasions on software security topics to classes of 100+ students.

Research Assistant for Software Security MOOC – Spring 2014 – Present

- Created introductory security exercises for online students

Conference Paper Reviews:

- ICSE 2015
- DSN 2014
- Agile 2014

Industrial Experience

Microsoft Research Cambridge UK
Research Intern – May 2014 – August 2014, May 2015 – August 2015

- Innovated and developed an automated approach to attack surface estimation; approach implemented on product teams within the company.
- Supported optimization efforts in software engineering management for internal Microsoft teams.

Self Employed
Freelance Work – August 2012 – August 2013

- Supported startups in the Cincinnati and Columbus areas in various capacities; entry into tech incubators, course correction on flagging projects, et cetera.
- Technical assistant to computational chemistry lab at the University of Cincinnati (development in C/Python, code reviews, troubleshooting, bug fixes).

Northrop Grumman – Xetron
Software Engineer (Band 1) – June 2010 – August 2012

- Individual classified tasking in the realm of network security and software engineering.
- Responsible for multiple investigations into new reverse engineering targets.
- Drove customer satisfaction from Satisfactory to Outstanding in customer-facing role.
- Provided on-site and remote technical assistance to customers in technical and non-technical roles.

Software Engineer (Co-op) – March 2009 – September 2009

- Lead a small team in developing a custom automated testing framework

Siemens PLM Software
Software Engineer (Co-op)– March 2007 – September 2007, March 2008 – September 2008

- Acted as go-between for software developers and customers; use cases, simple bug fixes, etc.
- Developed scalability tests for servers to estimate server usage for CAD software (NX, SolidEdge)
- Started development of a web front end for scalability tests.

Publications

Chris Theisen, “Reusing Stack Traces: Automated Attack Surface Approximation”, to appear in the 38th International Conference on Software Engineering - Doctoral Symposium.

Chris Theisen, Laurie Williams, Emerson Murphy-Hill, and Kevin Oliver, “Software Security Education at Scale”, to appear in Companion Proceedings of the 38th International Conference on Software Engineering.

Chris Theisen, and Laurie Williams, “Poster: Risk-Based Attack Surface Approximation”, appearing in the Proceedings of the Symposium and Bootcamp on the Science of Security, 121-123

Chris Theisen, “Automated Attack Surface Approximation”, in the 23rd ACM SIGSOFT International Symposium on the Foundations of Software Engineering - Student Research Competition, 2015, pp. 1063-1065.

Chris Theisen, Kim Herzig, Pat Morrison, Brendan Murphy, and Laurie Williams, “Approximating Attack Surfaces with Stack Traces”, in Companion Proceedings of the 37th International Conference on Software Engineering.

Presentations

November 5, 2015, “Attack Surface Analytics”, Data Science Workshop (DSW) at the IEEE International Symposium on Software Reliability Engineering (ISSRE), Washington, DC

October 29, 2015, “Automated Attack Surface Approximation”, Science of Security Industry Community Day, Raleigh, NC

September 4, 2015, “Automated Attack Surface Approximation”, Foundations of Software Engineering (Student Research Competition), Bergamo, IT

May 22, 2015, “Approximating Attack Surfaces with Stack Traces”, International Conference on Software Engineering, Florence, IT

Achievements

- 1st Place Graduate Students – Student Research Competition at FSE 2015
- Most Outstanding Co-op – Computer Science Class of 2010.
- Marine Leadership Award for leadership in the classroom – May 2008.