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EDUCATION

The University of Washington : September 2006 - Present

Expected Degree: Ph.D. in Computer Science

Location: Seattle, WA

Areas of Research: Programming Languages, Systems, Computer Security

Honors and Accomplishments:

- Recipient of the Dinning-Wolf Endowed Regental Fellowship (2006-2007)
- Recipient of the Boeing Company Fellowship (2006-2007)

Selected Courses:

- CSE 505 - Programming Languages
- CSE 506 - Advanced Topics in Programming Languages

The University of Virginia : September 2002 - May 2006

Degree: Bachelor of Science

Location: Charlottesville, VA

Major: Computer Science (Computer Graphics and Computer Security concentration)

Minor: Biomedical Engineering

Honors and Accomplishments:

- Finalist for the Computing Research Association's Outstanding Undergraduate Award (2006)
- Major Grade Point Average: 3.88/4.00 :: Overall GPA: 3.53/4.00

PUBLICATIONS

Anh Nguyen-Tuong, Salvatore Guarneri, Doug Greene, Jeffrey Shirley and David Evans.

Automatically Hardening Web Applications Using Precise Tainting.

In *Proceedings of the 20th IFIP International Information Security Conference*. Chiba, Japan. May 2005.

Also published in *Security and Privacy in the Age of Ubiquitous Computing*, edited by Ryoichi Sasaki, et al., Springer (IFIP 181), pp. 295-308. New York, 2005.

PRESENTATIONS

Automatically Hardening Web Applications Using Precise Tainting.

Twentieth IFIP International Information Security Conference (SEC 2005), Chiba, Japan, May 2005.

Automatically Hardening Web Applications Using Precise Tainting.

Works In Progress talk at USENIX Security Symposium, Baltimore, MD, August 2005.

Automatic Protection from Internet Attacks

University of Virginia Undergraduate Research Network Spring Symposium 2005, Charlottesville, VA, April 2005.

RESEARCH PROJECTS

SOC (Security Oriented Compiler)

Description: I am working with Dan Grossman and Yoshi Kohno to develop a security aware compiler. This work deals with ensuring compilers (1) do not change the semantics of a program with respect to security and (2) improve the security of a program given an attacker model. We are exploring ways to define the attacker model, how to modify programs to obey the attacker model, and how to provide proof that the attacks in the attacker model are prevented.

CLAMP

Description: I worked with Dan Grossman and Marius Nita on a project to detect portability bugs in software. I was responsible for implementing a library that kept track of type casts in a running C program. It had the ability to look up an arbitrary pointer and return its runtime type. The library was used to record the runtime type of pointers that were used in type casts. This information was used in later phases of the analysis to determine which casts were acceptable on the new machine that the code was being ported to.

Before Graduate School

PHPprevent (Fall 2004 - Spring 2006)

Description: I worked on a project called PHPprevent for making web applications more resistant to attacks. We developed a precise tainting system to track data through an interpreter and then used the taint information to prevent non-trusted data from being used in ways only trusted data should be used. I was specifically responsible for creating a technique to detect and prevent Cross-Site Scripting attacks. I implemented our techniques in the PHP interpreter and evaluated their effectiveness using a framework and testing strategy I developed.

Biologically Inspired Programming (2002 - 2004)

Supervisor: Professor David Evans

Description: I implemented an algorithm to allow one programmed “cell” to coexist in many different states to simulate the functions and benefits that organelles provide a real cell. I investigated how multiple cell programs interact when they are in a single cell.

TEACHING EXPERIENCE

Undergraduate Teaching Assistant at The University of Virginia

Class: CS445 - Introduction to Computer Graphics

Semesters: Spring 2005

Description: I graded assignments and tests and held office hours. During office hours, I helped students understand the theory behind their assignments and helped them with the programming for their assignments.

Class: CS216 - Program and Data Representation

Semesters: Fall 2004, Spring 2005, Fall 2005

Description: I assisted during labs, improved assignments, graded assignments, and graded exams.

Class: CS216 - Program and Data Representation

Semesters: Spring 2006

Description: As the head teaching assistant, I developed assignments and new course materials, conducted recitations, and coordinated the other teaching assistants.