Tyler William Thomas

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EDUCATION

PhD, Computing and Information Systems Imminent April 2018

University of North Carolina at Charlotte

Dissertation: *"Security Code Review with Static Analysis Techniques for the Detection and Remediation of Security Vulnerabilities."*

Advisor: Dr. Heather Lipford

Master of Science in Information Technology 2015

University of North Carolina at Charlotte

Bachelor of Arts in Software and Information Systems 2013

University of North Carolina at Charlotte

Summa Cum Laude

RESEARCH AND TEACHING INTERESTS

Software Engineering	Cybersecurity	Machine Learning (AI)
Application Security	Network Security	IT Infrastructure

FELLOWSHIPS AND GRANT

Graduate Assistance in Areas of National Need (GAANN) Teaching Fellowship	2014-Present
GASP Award Recipient	2014-16

HONORS AND AWARDS

President of Hexarity Computing Charity	2014-Present
Vice President of Interact	2013-14
Student Marshal for UNCC	2012
Voted First Place Research Flash Talks	2014
Chancellor's List (All Undergraduate Semesters)	2019-13
OWASP Affiliate	2016

TEACHING EXPERIENCE

Instructor: ITIS 4166 Network Based Application Development 2016

University of North Carolina at Charlotte

- ♣ Taught servlets, sessions, application-database interaction, databases, MVC, JSP, beans, and AJAX
- ♣ Integrated web security education into course curriculum
- ♣ Added hands-on exercises and workdays for increased student participation

- ♣ Restructured software engineering course to focus on real-world priorities
- ♣ Live coded applications during class
- ♣ Created example applications for students
- ♣ Created all assignments and projects
- ♣ Delivered in-depth lectures
- ♣ Created many sets of slides
- ♣ Graded assignments
- ♣ Graded projects
- ♣ Met with students regularly
- ♣ Held office hours

Co-Instructor: ITIS 2300 Web Application Development 2015
University of North Carolina at Charlotte
- ♣ Created and delivered 30% of course lectures
- ♣ Developed clicker quizzes and managed labs for an active learning classroom
- ♣ Developed and oversaw hands-on activities
- ♣ Instructed course in advanced active learning classroom
- ♣ Coordinated labs and grading with undergraduate TA's
- ♣ Tutored students in Javascript, JQuery, HTML, and CSS
- ♣ Graded projects
- ♣ Graded final exam
- ♣ Held office hours

Teaching Assistant: ITIS 5221/4221 Secure Web Apps 2014
University of North Carolina at Charlotte
- ♣ Tutored students in cybersecurity, penetration testing, detection techniques, and remediation
- ♣ Managed hacking and vulnerability remediation labs
- ♣ Proctored exams
- ♣ Graded projects and homework

Teaching Assistant: ITIS 2300 Web Application Development 2012-14
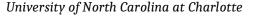*University of North Carolina at Charlotte*
- ♣ Tutored students in Javascript, JQuery, HTML, and CSS
- ♣ Graded projects
- ♣ Graded exams
- ♣ Held office hours

TEACHING WORKSHOPS AND SEMINARS ATTENDED

SOTL Open Swim	2016
How Students Learn: Strategies for Teaching Based on the New Science of Learning	2015
Engagement through Whole Group or Small Group Class Discussions	2015
Active Learning Classroom Training Session	2015
Moodle Open Swim	2015
Leveraging Effective Conversation for Success	2014
Teaching Secrets That'll Make Students Say "Wow!"	2014

RESEARCH EXPERIENCE

Research Assistant 2013-Present
University of North Carolina at Charlotte

- ♣ Designed interface for application specific vulnerability detection
- ♣ Assisted in the writing of research proposals
- ♣ Engineered security code review process, system, and interface fed by static analysis
- ♣ Explored use of interactive static analysis to teach security
- ♣ Examined effect of contextualized real time android permission notifications
- ♣ Studied social implications of expiring tweets and Facebook posts
- ♣ Developed network-based Android software in Java
- ♣ Obtained IRB certifications for all studies

Undergraduate Researcher   2013
University of North Carolina at Charlotte
- ♣ Developed native android applications in Java
- ♣ Engineered networked system for remote data collection
- ♣ Wrote extraction and sorting scripts for millions of data records
- ♣ Learned the fundamentals of academia under the direction of a PhD student mentor

INDUSTRY EXPERIENCE

Managing Director/Founder   2008-12
Thomas Tech Support
- ♣ Established licensed IT services company, Thomas Tech Support, at age 17
- ♣ Provided IT services to the Gaston County government and various corporations
- ♣ Authored the interpreted language, Interp-L, for experimental purposes
- ♣ Deployed an Exchange server, web server, and datacenter
- ♣ Migrated cloud-based data
- ♣ Communicated technical problems and coordinated solutions
- ♣ Formulated hardware and software specifications based on business needs
- ♣ Designed company website and maintained business records
- ♣ Developed professional customer contact skills
- ♣ Achieved the CompTIA A+ certification at age 17

CERTIFICATIONS

Computing Technology Industry Association (CompTia) IT Professional Certification   2008-Present

STUDENTS MENTORED

Katherine Currier, *Undergraduate Researcher*
Matthew Scola, *Undergraduate Special Topics Student*
Ambarish Regmi, *Peer Mentee*
Madiha Tabassum, *Peer Mentee*
Mahmood Mohammadi, *Peer Mentee*
Nasheen Nur, *Peer Mentee*

WORKS IN PROGRESS

"From the Ears and Eyes of Auditors: An Investigation of Security During Application Development"
Article manuscript in progress, to be submitted for publication in fall 2017.

"Examination and Evaluation of Tool Assisted Security Code Reviews Fed by Static Analysis"
Article manuscript in progress, to be submitted for publication in spring 2017.

PUBLICATIONS

Michael Whitney, Heather Richter Lipford, Bill Chu, and **Tyler Thomas**. "Embedding Secure Coding Instruction into the IDE: Complementing Early and Intermediate CS Courses with ESIDE" In press, *Journal of Educational Computing Research*, 2017.

Tyler Thomas, Heather Lipford, Bill Chu, Justin Smith, and Emerson Murphy-Hill. "What questions remain? an examination of how developers understand an interactive static analysis tool." In *WSIW@SOUPS*, 2016.

Tyler Thomas, Bill Chu, Heather Lipford, Justin Smith, and Emerson Murphy-Hill. "A study of interactive code annotation for access control vulnerabilities" in *Proceedings of the 2015 IEEE Symposium on Visual Languages and Human-Centric Computing*, ser. VLHCC '15. Washington, DC, USA: IEEE Computer Society, 2015.

Tyler Thomas, "Exploring the Usability and Effectiveness of Interactive Annotation and Code Review for the Detection of Security Vulnerabilities" In *2015 IEEE Symposium on Visual Languages and Human-Centric Computing* (VL/HCC) Atlanta, GA USA 2015.

Jun Zhu, Bill Chu, Heather Lipford, and **Tyler Thomas**. "Mitigating access control vulnerabilities through interactive static analysis." In *Proceedings of the 20th ACM Symposium on Access Control Models and Technologies*, SACMAT '15, New York, NY, USA 2015.

Heather Lipford, **Tyler Thomas**, Bill Chu, and Emerson Murphy-Hill. "Interactive Code Annotation for Security Vulnerability Detection." In *Proceedings of the 2014 ACM Workshop on Security Information Workers* (SIW '14). ACM, New York, NY, USA 2014.

REFERENCES

Heather Lipford, Professor
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University of North Carolina at Charlotte
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