CURRICULUM VITAE

NAME: Dr. Benjamin Mood

CURRENT: Assistant Professor of Computer Science, Point Loma Nazarene University

GRADUATE AND UNDERGRADUATE SCHOOLS ATTENDED:

University of Florida, Gainesville, Florida, Spring 2014 - Spring 2016
University of Oregon, Eugene, Oregon, Fall 2010 - Summer 2014
Point Loma Nazarene University, Point Loma, California, Fall 2006 - Spring 2010

DEGREES AWARDED:

Doctor of Philosophy, Computer Science, 2016, University of Florida
Master of Science, Computer & Information Science, 2012, University of Oregon
Bachelor of Science, Computer Science, 2010, Point Loma Nazarene University

PROFESSIONAL EXPERIENCE:

Assistant Professor of Computer Science, Point Loma Nazarene University:
August 2016 - Present

Classes Taught:

CSC1054 – Java II (Object Oriented Programming)
CSC2054 – C++ & Data structures
CSC3023 – Software Engineering
CSC3094 – Programming Languages
CSC4012 – Special Topics in Computer Science
CSC4093 – Software Project
CSC4095 – Service Learning
ISS3073 – Networking and Security
ISS4003 – Information and Computer Security
CIT3024 – Computer and Information Security
CIT4014 – Web Programming
CIT4024 – Visual Programming

Research Projects:

Towards Non-Violent Video Games: Summer 2017 - Present

In this project, my collaborators and I are examining how people perceive violence in video games. For the first part of this work, we created a simple game to use in our experiments. In the future, we will have people play the game and inform us how violent it was. By modifying certain elements in the game, we can gain new insights into what people perceive as violent.

Exploring Data Leakage in Flight Tracking Software: Summer 2019 and Spring 2020

In this project, a student and I examined data privacy concerns in airplane trackers. Plane trackers (like flightaware.com) allow people to know if their connecting flight is delayed, but also may let a malicious party track a private plane. Starting from a flying plane, anyone can find the home address of the owner. We also gained access to the official U.S. flight database to get the plane information the U.S. gives out publically, but stopped due to COVID. This project may be continued at a future date.

Manipulating Social Media for Profit: Summer 2018

In this project, one of my students and I attempted to influence the recommendations of some social media posts in order to direct to people to other social media posts that we wanted people to see. This would allow nefarious individuals to get extra views and likes on their pages. We were working to automate this visiting process. We were unsuccessful in getting this to work, but may revisit it in the future with new ideas.

Improving Secure Computation: Spring 2016 - Present

I maintain and occasionally update a tool to assist in research to advance secure multiparty computation. In addition to answering the periodical question, I have added new features on one occasion and updated the code to work with a new operating system since starting at PLNU. This tool allows other researchers to work on their projects more efficiently. I have also worked on two peer-reviewed papers since graduating with my PhD in May 2016.

Service:

Advised Senior Seminar Projects 2017,2018,2019,2020, and 2021
Served on Honors Committees 2017-2018, 2019-2020, and 2020-2021
Assisted at the Science Honors Weekend recruiting event in 2017, 2018, 2019, 2020, and 2021
Assisted at Department NSO, Homecoming, and Graduation events 2016-2021
Member of Disability Resource Center Committee SP2021 - Present
Member of Graduate and Extended Studies Committee 2019-2020
Member of Social Ethos Committee 2017-2018
Created website and maintain a survey for psychology PhD, Student 2020 - Present
Helped with Church slides 2020 - 2021
Baked desserts for Church events 2017-2021

Conferences Attended:

Network and Distributed System Security Symposium 2020
Association of Christians in the Mathematical Sciences 2019
Network and Distributed System Security Symposium 2019
Network and Distributed System Security Symposium 2018
Association of Christians in the Mathematical Sciences 2017
Network and Distributed System Security Symposium 2017

Graduate Research Assistant:

August 2014 - May 2016, University of Florida
June 2011 - July 2014, University of Oregon

This was research for my Masters thesis and PhD dissertation to advance secure computation on mobile devices by improving compilers, execution systems, and developing new and innovative protocols. I was responsible for creating collaborations, developing research ideas, and implementing those ideas.

TALKS:

Towards Non-Violent and Christian Video Games, ACMS 2019
A Practical Mechanism to Perform Secure Computation. ACMS 2017
Optimizing Garbled Circuit Secure Computation for Mobile Devices, Yale University, 2015
Privacy Preserving Computation on Mobile Devices, Oregon Bioscience Association, 2013
Optimizing Secure Function Evaluation for Mobile Devices, Galois Inc., 2012

GRANTS, AWARDS, AND HONORS:

Gartner Group Graduate Fellowship Endowment, 2014
Travel Grant, Computer and Communications Security 2014
Research Assistantship, University of Florida, Fall 2014 to Spring 2016
Graduate Research Fellowship, University of Oregon, Summer 2011 to Summer 2014
Erwin and Gertrude Juilfs Scholarship, University of Oregon, Fall 2013
Travel Grant, USENIX Security 2012
Graduate Teaching Fellowship, University of Oregon, Fall 2010 to Spring 2011
Completion of Honors Thesis, Point Loma Nazarene University, Spring 2010

OTHER:

Sole creator and developer of flash game "Forge'd Cannon", Spring 2013 – Spring 2016
Advanced To Candidacy Spring 2015, University of Florida
Co-founder and co-leader of Graduate Student Bible study at the University of Oregon, Fall 2012 - Spring 2014
Participated in "Downtown Clean-Up" in Downtown Gainesville, August 2015
Helped organize Security Day 2012, 2013, and 2014 at the University of Oregon
Wrote summaries of presentations for Financial Cryptography and Data Security 2012 and the USENIX Security Symposium 2012

PUBLICATIONS:

Joseph Choi, Dave (Jing) Tian, Grant Hernandez, Christopher Patton, Benjamin Mood, Thomas Shrimpton, Patrick Traynor, and Kevin Butler. A Hybrid Approach to Secure Function Evaluation Using SGX. 14th ACM ASIA Conference on Computer and Communications Security (ASIACCS'19), Auckland, New Zealand, July 2019.

Benjamin Mood and Kevin Butler. PAL: A Pseudo Assembly Language for Optimizing Secure Function Evaluation in Mobile Devices. Journal of Information Security and Applications, 40, pg. 78-91, Jun. 2018.

Henry Carter, Benjamin Mood, Patrick Traynor, Kevin Butler. Outsourcing Secure Two-Party Computation as a Black Box. Journal of Security and Communication Networks (SCN), 2016.

Henry Carter, Benjamin Mood, Patrick Traynor, K. Butler. Secure Outsourced Garbled Circuit Evaluation for Mobile Devices. Journal of Computer Security (JCS), 24(2):137-180, 2016.

Benjamin Mood, Debayan Gupta, Henry Carter, Kevin Butler, and Patrick Traynor. Frigate: A Validated, Extensible, and Efficient Compiler and Interpreter for Secure Computation, Proceedings of the 1st IEEE European Symposium on Security and Privacy, 2016

Henry Carter, Benjamin Mood, Patrick Traynor, and Kevin Butler. Outsourcing Secure Two-Party Computation as a Black Box, Proceedings of the International Conference on Cryptology and Network Security (CANS), December 2015.

Benjamin Mood, Debayan Gupta, Kevin Butler, and Joan Feigenbaum. Reuse It Or Lose It: More Efficient Secure Computation Through Reuse of Encrypted Values. In Proceedings of the 21st ACM Conference on Computer and Communications Security, Scottsdale, Arizona, November 2014.

Adam Bates, Benjamin Mood, Joe Pletcher, Hannah Pruse, Masoud Valafar, and Kevin Butler. On Detecting Co-Resident Cloud Instances Using Network Flow Watermarking Techniques. International Journal of Information Security: Volume 13, Issue 2, pg. 171-189. 2014.

Henry Carter, Benjamin Mood, Patrick Traynor, and Kevin Butler. Secure Outsourced Garbled Circuit Evaluation for Mobile Devices 22nd USENIX Security Symposium, Washington, DC, USA, August 2013.

Benjamin Kreuter, ahbi shelat, Benjamin Mood, and Kevin Butler. PCF: A Portable Circuit Format For Scalable Two-Party Secure Computation. 22nd USENIX Security Symposium, Washington, DC, USA, August 2013.

Adam Bates, Benjamin Mood, Masoud Valafar, and Kevin Butler. Towards Secure Provenance- based Access Control in Cloud Environments. 3rd ACM Conference on Data and Application Security and Privacy. San Antonio, TX, USA, 2013.

Benjamin Mood. Optimizing Secure Function Evaluation on Mobile Devices. Masters The- sis, University of Oregon 2012

Benjamin Mood, Lara Letaw, and Kevin Butler. Memory-Efficient Garbled Circuit Generation for Mobile Devices. In Financial Cryptography and Data Security, February 2012.

POSTERS:

The Frigate Compiler for Secure Computation, USENIX Security Symposium 2015, Washington D.C.
More Efficient Secure Computation Through Reuse of Encrypted Values, Graduate Student Research Day 2014, University of Florida
Saving Sate in Privacy Preserving Computation, Graduate Research Forum 2014, University of Oregon
Outsourcing Two-Party Privacy-Preserving Computation, Graduate Research Forum 2013, University of Oregon
Privacy Preserving Computations on Smartphones, Graduate Research Forum 2012, University of Oregon
Secure Function Evaluation in Mobile Environments, Department Poster Contest 2011, University of Oregon

CONFERENCE REVIEWS:

Privacy Enhancing Technology Symposium (PETS) 2014 and 2015 USENIX Security Symposium 2014 and 2015
European Symposium on Research in Computer Security (ESORICS) 2012 and 2014
ACM Conference on Computer and Communications Security (CCS) 2013, 2014, and 2015

JOURNAL REVIEWS:

Transactions on Parallel and Distributed Systems 2017
Transactions on Information Forensics & Security 2017 and 2018
ACM Transactions on Privacy and Security 2017
IEEE Signal Processing Society 2017