

Matthew Lentz

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Interests

I am broadly interested in the areas of networking and systems research.

Education

University of Maryland, College Park, Maryland, USA
Ph.D. in Computer Science, Fall 2012 – Spring 2019 (Expected)
Advisor: Bobby Bhattacharjee
GPA: 3.90
B.S. in Computer Engineering, Fall 2006 – Spring 2010
GPA: 3.82

Refereed

Publications

- SeCloak: ARM TrustZone-based Mobile Peripheral Control**
Matthew Lentz, Rijurekha Sen, Peter Druschel, Bobby Bhattacharjee
MobiSys 2018 (International Conference on Mobile Systems, Applications, and Services)
 - Dynamic Frequency Resource Allocation in Heterogeneous Cellular Networks**
Vaibhav Singh, *Matthew Lentz*, Bobby Bhattacharjee, Richard La, Mark Shayman
IEEE TMC 2016 (Transactions on Mobile Computing)
 - Drowsy Power Management**
Matthew Lentz, James Litton, Bobby Bhattacharjee
SOSP 2015 (Symposium on Operating System Principles)
 - Brave New Word: Privacy Risks for Mobile Users**
Paarijaat Aditya, Bobby Bhattacharjee, Peter Druschel, Viktor Erdelyi, *Matthew Lentz* (*Alphabetical*)
SPME 2014 (Workshop on Security and Privacy Aspects of Mobile Environments)
 - SDDR: Light-weight, Secure Mobile Encounters**
Matthew Lentz, Viktor Erdelyi, Paarijaat Aditya, Elaine Shi, Peter Druschel, Bobby Bhattacharjee
USENIX Security Symposium 2014
 - EnCore: Private, Context-based Communication for Mobile Social Apps**
Paarijaat Aditya, Viktor Erdelyi, *Matthew Lentz*, Elaine Shi, Bobby Bhattacharjee, Peter Druschel
MobiSys 2014 (International Conference on Mobile Systems, Applications, and Services)
 - D-Mystifying the D-Root Address Change**
Matthew Lentz, Dave Levin, Jason Castonguay, Neil Spring, and Bobby Bhattacharjee
IMC 2013 (Internet Measurement Conference) Short Paper
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Invited Talks

- SeCloak: ARM TrustZone-based Mobile Peripheral Control*
• MobiSys Conference. Munich, Germany. June 2018
- Drowsy Power Management*
• SOSF Conference. Monterey, California. October 2015
- SDDR: Light-Weight, Secure Mobile Encounters*
• USENIX Security Symposium. San Diego, California. August 2014
- D-Mystifying the D-Root Address Change*
• IMC Conference. Barcelona, Spain. October 2013
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Research Experience

- Microsoft Research**, Redmond, Washington USA **3/2017 – 5/2017**
Research Intern (Mentors: Anirudh Badam, Ranveer Chandra)
Continuation of my work during the previous internship.
- Microsoft Research**, Redmond, Washington USA **5/2016 – 8/2016**
Research Intern (Mentors: Anirudh Badam, Ranveer Chandra)
Performed research on algorithms and optimization for multi-battery systems, with a focus on “2-in-1” laptop/tablet systems. Worked towards informing the low-level control logic with relevant user behavior predictions (e.g., time until next charge) based on telemetry data. Built a simulator for the design and evaluation of multi-battery systems, with support for various hardware interconnects, battery models, workloads, and control algorithms.
- University of Maryland**, College Park, Maryland USA **2/2012 – Present**
Graduate Research Assistant (Advisor: Bobby Bhattacharjee)
Performing research in a variety of areas, including:
• Operating system security primitives for I/O
• Censorship-resistant communication over video chats
• Operating system power management
• Privacy-preserving mobile social applications
• DNS root server measurement and analysis
• Cellular network spectrum allocation and sharing
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Teaching Experience

- CMSC417: Computer Networks** **Fall 2015**
Teaching Assistant
• Designed new course projects to emphasize aspects of high-performance networking (priority-based job scheduler), and usage of analysis tools such as Wireshark (chat protocol reverse engineering).
• Created a Git-based project submission and grading system.
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Professional Experience

- NSA - Laboratory for Telecommunication Sciences**, College Park, Maryland **5/2011 – 8/2011**
Intern - Computer Science Internship Program
Added support for the LLVM compiler infrastructure to Cray’s Chapel parallel programming language compiler, allowing for faster compilation and better optimization control.
- NSA - Laboratory for Telecommunication Sciences**, College Park, Maryland **9/2010 – 5/2011**
Graduate Research Assistant

Continuation of my work during the previous summer internship.

NSA - Laboratory for Telecommunication Sciences, College Park, Maryland **6/2010 – 8/2010**
Intern - Computer Science Internship Program

Developed highly-optimized real-time signal processing software using NVIDIA's CUDA libraries to look for signals in the environment, as well as compute their range and direction of arrival.

DRS Signal Solutions, Gaithersburg, Maryland **6/2009 – 8/2009**
Intern - Embedded Software Engineering

Developed a complete signal collection product prototype, implementing features in software running on an embedded radio platform.

DRS Signal Solutions, Gaithersburg, Maryland **6/2008 – 8/2008**
Intern - Application Software Engineering

Programmed helper applications for common engineering tasks, and expanded the feature set of GUI applications which interface with the hardware radio platforms.

References

Available upon request.