

Dave Levin

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Academic Appointment	University of Maryland , College Park, MD USA <i>Assistant Professor</i> 2017 – present My research focus is on systems and network security. I am also Chair of the Computer Science Undergraduate Honors program. I am affiliated with UMIACS, MC2, and the Maryland-Max-Planck PhD Program.
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Education	University of Maryland , College Park, Maryland USA Ph.D., Computer Science, September 2010 <ul style="list-style-type: none">• Dissertation: Systems-compatible Incentives• Advisors: Bobby Bhattacharjee, Neil Spring, and Aravind Srinivasan B.S., Computer Science, May 2002 B.S., Mathematics, May 2002 University of Notre Dame , Notre Dame, Indiana USA Attended August 1997 – May 1999
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Honors and Awards	<ul style="list-style-type: none">• Facebook/USENIX Internet Defense Prize (3rd place), for <i>Weaponizing Middleboxes for TCP Reflected Amplification</i>, 2021• Distinguished paper award, USENIX Security 2021, for <i>Weaponizing Middleboxes for TCP Reflected Amplification</i>• IRTF Applied Networking Research Prize (ANRP) for <i>Come as You Are: Helping Unmodified Clients Bypass Censorship with Server-side Evasion</i>, 2021• NCWIT (National Center for Women & Information Technology) Undergraduate Research Mentoring Award, 2020• NSF CAREER Award, 2020• IRTF Applied Networking Research Prize (ANRP) for <i>Understanding the Role of Registrars in DNSSEC Deployment</i>, 2019• Dean's Award for Excellence in Teaching, College of Computer, Mathematical, and Natural Sciences, 2018• IEEE Cybersecurity Award for Innovation 2017, for <i>CRLite: A Scalable System for Pushing All TLS Revocations to All Browsers</i>• Distinguished paper award, USENIX Security 2017, for <i>A Longitudinal, End-to-End View of the DNSSEC Ecosystem</i>• Reviewer award, SIGCOMM 2012• Best paper, USENIX NSDI 2009, for <i>TrInc: Small Trusted Hardware for Large Distributed Systems</i>• Best presentation, Computer Science track of UMD Graduate Research Interaction Day, 2009• Microsoft Live Labs fellowship, awarded 2008• Dean's fellowship for excellence in research, Computer Science Dept., Univ. of Maryland, 2006• Outstanding undergraduate computer science teaching assistant award, Univ. of Maryland, 2002
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Refereed Publications	<ol style="list-style-type: none">1. Sound Methodology for Downloading Webpages Soumya Indela, Dave Levin TMA 2021 (Network Traffic Measurement and Analysis Conference)2. Even Censors Have a Backup: Examining the GFWs Double HTTPS Censorship System Kevin Bock, Gabriel Naval, Kyle Reese, Dave Levin FOCI 2021 (ACM Workshop on Free and Open Communications on the Internet)
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3. **Bento: Safely Bringing Network Function Virtualization to Tor**
Michael Reininger, Arushi Arora, Stephen Herwig, Nicholas Francino, Jayson Hurst, Christina Garman, Dave Levin
ACM SIGCOMM 2021
4. **The Ties that un-Bind: Decoupling IP from web services and sockets for robust addressing agility at CDN-scale**
Marwan Fayed, Vasileios Giotsas, Lorenz Bauer, Sami Kerola, Marek Majkowski, Pavel Odintsov, Jakub Sitnicki, Taejoong Chung, Dave Levin, Alan Mislove, Nick Sullivan, Chris Wood
ACM SIGCOMM 2021
5. **Your Censor is My Censor: Weaponizing Censorship Infrastructure for Availability Attacks**
Kevin Bock, Pranav Bharadwaj, Jasraj Singh, Dave Levin
WOOT 2021 (IEEE Workshop on Offensive Technologies)
6. **Measurement and Analysis of Automated Certificate Reissuance**
Olamide Omolola, Richard Roberts, Ishtiaq Ashiq, Taejoong Chung, Dave Levin, Alan Mislove
PAM 2021 (Passive and Active Measurement Conference)
7. **Under the Hood of the Ethereum Gossip Protocol**
Lucianna Kiffer, Asad Salman, Dave Levin, Alan Mislove, Cristina Nita-Rotaru
FC 2021 (Financial Cryptography and Data Security)
8. **Weaponizing Middleboxes for TCP Reflected Amplification**
Kevin Bock, Abdulrahman Alaraj, Yair Fax, Kyle Hurley, Eric Wustrow, Dave Levin
USENIX Security 2021
9. **Detecting and Evading Censorship-in-Depth: A Case Study of Iran's Protocol Whitelister**
Kevin Bock, Yair Fax, Kyle Reese, Jasraj Singh, Dave Levin
FOCI 2020 (USENIX Workshop on Free and Open Communications on the Internet)
10. **Assertion-Carrying Certificates**
Waqar Aqeel, Zachary Hanif, James Larisch, Olamide Omolola, Taejoong Chung, Dave Levin, Bruce Maggs, Alan Mislove, Bryan Parno, Christo Wilson
FCS 2020 (Workshop on Foundations of Computer Security)
11. **Come as You Are: Helping Unmodified Clients Bypass Censorship with Server-side Evasion**
Kevin Bock, George Hughey, Louis-Henri Merino, Tania Arya, Daniel Liscinsky, Regina Pogolian, Dave Levin
ACM SIGCOMM 2020
12. **.how .you .spot .whoswho .online .sucks: Deceiving Users with Generic Top-Level Domains**
Richard Roberts, Rachel Walter, Daniela Lulli, Dave Levin
ConPro 2020 (Workshop on Technology and Consumer Protection) Accepted Talk
13. **A Deeper Look at Web Content Availability and Consistency over HTTP/S**
Muhammad Talha Paracha, Balakrishnan Chandrasekara, David Choffnes, Dave Levin
TMA 2020 (Network Traffic Measurement and Analysis Conference)
14. **Build It, Break It, Fix It: Contesting Secure Development**
James Parker, Michael Hicks, Andrew Ruef, Michelle L. Mazurek, Dave Levin, Daniel Votipka, Piotr Mardziel, Kelsey R. Fulton
ACM TOPS March 2020 (Transactions on Privacy and Security)
15. **Achieving Keyless CDNs with Conclaves**
Stephen Herwig, Christina Garman, Dave Levin
USENIX Security 2020

16. **Geneva: Evolving Censorship Evasion Strategies**
Kevin Bock, George Hughey, Dave Levin
ACM CCS 2019 (Conference on Computer and Communications Security)
17. **You Are Who You Appear to Be: A Longitudinal Study of Domain Impersonation in TLS Certificates**
Richard Roberts, Yaelle Goldschlag, Rachel Walter, Taejoong Chung, Alan Mislove, Dave Levin
ACM CCS 2019 (Conference on Computer and Communications Security)
18. **When Certificate Transparency Is Too Transparent: Analyzing Information Leakage in HTTPS Domain Names**
Richard Roberts, Dave Levin
WPES 2019 (Workshop on Privacy in the Electronic Society) Short paper
19. **RPKI is Coming of Age: A Longitudinal Study of RPKI Deployment and Invalid Route Origins**
Taejoong Chung, Emile Aben, Tim Bruijnzeels, Balakrishnan Chandrasekaran, David Choffnes, Dave Levin, Bruce M. Maggs, Alan Mislove, Roland van Rijswijk-Deij, John P. Rula, Nick Sullivan
ACM IMC 2019 (Internet Measurement Conference) Long paper
20. **Measuring TLS key exchange with post-quantum KEM**
Krzysztof Kwiatkowski, Nick Sullivan, Adam Langley, Dave Levin, Alan Mislove
NIST Second PQC Standardization Conference 2019
21. **Residential Links Under the Weather**
Ramakrishna Padmanabhan, Aaron Schulman, Dave Levin, Neil Spring
ACM SIGCOMM 2019
22. **Automatically Learning How to Evade Censorship**
Dave Levin
USENIX ScAI Net 2019 (Security and AI Networking Conference)
23. **How to find correlated Internet failures**
Ramakrishna Padmanabhan, Aaron Schulman, Alberto Dainotti, Dave Levin, Neil Spring
PAM 2019 (Passive and Active Measurement Conference)
24. **Measurement and Analysis of Hajime, a Peer-to-peer IoT Botnet**
Stephen Herwig, Katura Harvey, George Hughey, Richard Roberts, Dave Levin
NDSS 2019 (Network and Distributed System Security Symposium)
25. **Is the Web Ready for OCSP Must Staple?**
Taejoong Chung, Jay Lok, Balakrishnan Chandrasekaran, David Choffnes, Dave Levin, Bruce Maggs, Alan Mislove, John Rula, Nick Sullivan, Christo Wilson
ACM IMC 2018 (Internet Measurement Conference) Long paper
26. **Analyzing Ethereum's Contract Topology**
Lucianna Kiffer, Dave Levin, Alan Mislove
ACM IMC 2018 (Internet Measurement Conference) Short paper
27. **King of the Hill: A Novel Cybersecurity Competition for Teaching Penetration Testing**
Kevin Bock, George Hughey, Dave Levin
USENIX ASE 2018 (Workshop on Advances in Security Education)
28. **Internet Anycast: Performance, Problems, and Potential**
Zhihao Li, Dave Levin, Neil Spring, Bobby Bhattacharjee
ACM SIGCOMM 2018
29. **Analysis of SSL Certificate Reissues and Revocations in the Wake of Heartbleed**
Liang Zhang, David Choffnes, Tudor Dumitras, Dave Levin, Alan Mislove, Aaron Schulman, Christo Wilson
Communications of the ACM Research Highlights, March 2018 (Vol. 61, No. 3)

30. **An End-to-End View of DNSSEC Ecosystem Management**
Taejoong Chung, Roland van Rijswijk-Deij, Balakrishnan Chandrasekaran, David Choffnes, Dave Levin, Bruce M. Maggs, Alan Mislove, Christo Wilson
USENIX ;login: Winter 2017 (Vol. 42, No. 4)
31. **Stick a fork in it: Analyzing the Ethereum network partition**
Lucianna Kiffer, Dave Levin, Alan Mislove
HotNets 2017 (ACM Workshop on Hot Topics in Networking)
32. **Understanding the Role of Registrars in DNSSEC Deployment**
Taejoong Chung, Roland van Rijswijk-Deij, David Choffnes, Alan Mislove, Christo Wilson, Dave Levin, Bruce M. Maggs
ACM IMC 2017 (Internet Measurement Conference) Long paper
33. **unCaptcha: A Low-Resource Defeat of reCaptcha's Audio Challenge**
Kevin Bock, Daven Patel, George Hughey, Dave Levin
USENIX WOOT 2017 (Workshop on Offensive Technologies)
34. **DeTor: Provably Avoiding Geographic Regions in Tor**
Zhihao Li, Stephen Herwig, Dave Levin
USENIX Security 2017
35. **A Longitudinal, End-to-End View of the DNSSEC Ecosystem**
Taejoong Chung, Roland van Rijswijk-Deij, Balakrishnan Chandrasekaran, David Choffnes, Dave Levin, Bruce M. Maggs, Alan Mislove, Christo Wilson
USENIX Security 2017
36. **CRLite: A Scalable System for Pushing All TLS Revocations to All Browsers**
James Larisch, David Choffnes, Dave Levin, Bruce M. Maggs, Alan Mislove, Christo Wilson
Oakland 2017 (IEEE Symposium on Security and Privacy)
37. **Measuring and Applying Invalid SSL Certificates: The Silent Majority**
Taejoong Chung, Yabing Liu, David Choffnes, Dave Levin, Bruce M. Maggs, Alan Mislove, Christo Wilson
ACM IMC 2016 (Internet Measurement Conference) Long paper
38. **Measurement and Analysis of Private Key Sharing in the HTTPS Ecosystem**
Frank Cangialosi, Taejoong Chung, David Choffnes, Dave Levin, Bruce M. Maggs, Alan Mislove, Christo Wilson
ACM CCS 2016 (Conference on Computer and Communications Security)
39. **Build It, Break It, Fix It: Contesting Secure Development**
Andrew Ruef, Michael Hicks, James Parker, Dave Levin, Michelle Mazurek, Piotr Mardziel
ACM CCS 2016 (Conference on Computer and Communications Security)
40. **Picocenter: Supporting long-lived, mostly-idle applications in cloud environments**
Liang Zhang, James Litton, Frank Cangialosi, Theophilus Benson, Dave Levin, Alan Mislove
EuroSys 2016 (European Conference on Computer Systems)
41. **Anomaly Detection on D-root**
Zhihao Li, Dave Levin, Bobby Bhattacharjee, Neil Spring
DINR Workshop 2016 (DNS and Internet Naming Research Directions)
42. **DNSql: Processing Massive DNS Collections**
Stephen Herwig, Dave Levin, Bobby Bhattacharjee, Neil Spring
DINR Workshop 2016 (DNS and Internet Naming Research Directions)
43. **Ting: Measuring and Exploiting Latencies Between All Tor Nodes**
Frank Cangialosi, Dave Levin, Neil Spring
ACM IMC 2015 (Internet Measurement Conference) Long paper

44. **An End-to-End Measurement of Certificate Revocation in the Web's PKI**
Yabing Liu, Will Tome, Liang Zhang, David Choffnes, Dave Levin, Bruce Maggs, Alan Mislove, Aaron Schulman, Christo Wilson
ACM IMC 2015 (Internet Measurement Conference) Long paper
45. **Alibi Routing**
Dave Levin, Youndo Lee, Luke Valenta, Zhihao Li, Victoria Lai, Cristian Lumezanu, Neil Spring, Bobby Bhattacharjee
ACM SIGCOMM 2015
46. **Build It Break It: Measuring and Comparing Development Security**
Andrew Ruef, Michael Hicks, James Parker, Dave Levin, Atif Memon, Jan Plane, Piotr Mardziel
CSET 2015 (Workshop on Cyber Security Experimentation and Test)
47. **Programming Slick Network Functions**
Bilal Anwer, Theophilus Benson, Nick Feamster, Dave Levin
SOSR 2015 (Symposium on SDN Research)
48. **UAv6: Alias Resolution in IPv6 Using Unused Addresses**
Ramakrishna Padmanabhan, Zhihao Li, Dave Levin, Neil Spring
PAM 2015 (Passive and Active Measurement Conference)
49. **RevCast: Fast, Private Certificate Revocation over FM Radio**
Aaron Schulman, Dave Levin, Neil Spring
ACM CCS 2014 (Conference on Computer and Communications Security)
50. **Analysis of SSL Certificate Reissues and Revocations in the Wake of Heartbleed**
Liang Zhang, Dave Choffnes, Tudor Dumitras, Dave Levin, Alan Mislove, Aaron Schulman, Christo Wilson
ACM IMC 2014 (Internet Measurement Conference) Long paper
51. **D-mystifying the D-root Address Change**
Matthew Lentz, Dave Levin, Jason Castonguay, Neil Spring, Bobby Bhattacharjee
ACM IMC 2013 (Internet Measurement Conference) Short paper
52. **A Slick Control Plane for Network Middleboxes**
Bilal Anwer, Theophilus Benson, Nick Feamster, Dave Levin, Jennifer Rexford
ONS 2013 (Open Network Summit)
53. **SDX: A Software Defined Internet Exchange**
Josh Bailey, Russ Clark, Nick Feamster, Dave Levin, Jennifer Rexford, Scott Shenker
ONS 2013 (Open Network Summit)
54. **Making Currency Cheap with iOwe**
Dave Levin, Aaron Schulman, Katrina LaCurts, Neil Spring, Bobby Bhattacharjee
NetEcon 2011 (Workshop on the Economics of Networks, Systems, and Computation)
55. **Secure Sharing in Distributed Information Management Applications: Problems and Directions**
Piotr Mardziel, Adam Bender, Michael Hicks, Dave Levin, Mudhakar Srivatsa, Jonathan Katz
ACITA 2010 (Annual Conference of the International Technology Alliance)
56. **Don't Love Thy Nearest Neighbor**
Cristian Lumezanu, Dave Levin, Bo Han, Neil Spring, Bobby Bhattacharjee
IPTPS 2010 (International Workshop on Peer-to-Peer Systems)
57. **Stay or go? Participation in Under-Provisioned Video Streams**
Dave Levin, Daniel Malter, Neil Spring, Bobby Bhattacharjee
NetEcon 2009 (Workshop on the Economics of Networks, Systems, and Computation)

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