Paul Pearce

CONTACT INFORMATION

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UC Berkeley
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RESEARCH INTERESTS

My research brings empirical grounding and understanding to the study of global, hidden Internet security problems. My work has focused on both politically and economically motivated attacks, spanning censorship, cybercrime, and "advanced persistent threats." In pursuit of these goals I have built Internet-scale measurement platforms and designed new empirical methods aimed at discovering complex and unseen adversarial behavior.

EDUCATION

University of California, Berkeley May 2013 - Present

PhD Candidate, Computer Science
Advised by Vern Paxson

University of California, Berkeley Aug 2010 - May 2013

Master of Science (MS), Computer Science
Advised by Vern Paxson and David Wagner

University of California, Berkeley Aug 2007 - Dec 2009

Bachelor of Science, Electrical Engineering and Computer Science
Graduated with Highest Honors

Chaffey and Mt San Antonio Community Colleges Jan 2004 - Jun 2007

CONFERENCE PUBLICATIONS

[1] **P. Pearce**, B. Jones, F. Li, R. Ensafi, N. Weaver, N. Feamster, V. Paxson, "Global Measurement of DNS Manipulation", *26th USENIX Security Symposium (USENIX)*, Aug 2017

[2] R. Singh, R. Nithyanand, S. Afroz, **P. Pearce**, M. C. Tschantz, P. Gill, V. Paxson, "Characterizing the Nature and Dynamics of Tor Exit Blocking", *26th USENIX Security Symposium (USENIX)*, Aug 2017

[3] **P. Pearce**, R. Ensafi, F. Li, N. Feamster, V. Paxson, "Augur: Internet-Wide Detection of Connectivity Disruptions", *38th IEEE Symposium on Security and Privacy (Oakland)*, May 2017

[4] B. Farinholt, M. Rezaeirad, **P. Pearce**, H. Dharmdasani, H. Yiny, S. Le Blond, D. McCoy, K. Levchenko, "To Catch a Ratter: Monitoring the Behavior of Amateur DarkComet RAT Operators in the Wild", *38th IEEE Symposium on Security and Privacy (Oakland)*, May 2017

[5] K. Thomas, E. Bursztein, C. Grier, G. Ho, N. Jagpal, A. Kapravelos, D. McCoy, A. Nappa, V. Paxson, **P. Pearce**, N. Provos, M. A. Rajab, "Ad Injection at Scale: Assessing Deceptive Advertisement Modifications", *36th IEEE Symposium on Security and Privacy (Oakland)*, May 2015. **Distinguished Practical Paper**

[6] **P. Pearce**, V. Dave, C. Grier, K. Levchenko, S. Guha, D. McCoy, V. Paxson, S. Savage, G. M. Voelker, "Characterizing Large-Scale Click Fraud in ZeroAccess", *21st ACM Conference on Computer and Communications Security (CCS)*, Nov 2014

[7] **P. Pearce**, C. Grier, V. Paxson, V. Dave, D. McCoy, G. M. Voelker, and S. Savage. "The ZeroAccess Auto-Clicking and Search-Hijacking Click Fraud Modules", *Technical report, EECS Department, University of California, Berkeley*, Dec 2013

[8] **P. Pearce**, G. Nunez, A. P. Felt, and D. Wagner, "AdDroid: Privilege Separation for Applications and Advertisers in Android", *7th ACM Symposium on Information, Computer and Communications Security (ASIACCS)*, May 2012

[9] B. Miller, **P. Pearce** and C. Grier, C. Kreibich, V. Paxson, "What's Clicking What? Techniques and Innovations of Today's Clickbots", *8th Conference on Detection of Intrusions and Malware & Vulnerability Assessment (DIMVA)*, Jul 2011

[10] J. A. Colmenares, S. Bird, H. Cook, **P. Pearce**, D. Zhu, J. Shalf, K. Asanovic, and J. Kubiatowicz. "Resource Management in the Tessellation Manycore OS", *USENIX Workshop on Hot Topics in Parallelism (HotPar)*, Jun 2010

[11] K. Klues, B. Rhoden, D. Zhu, **P. Pearce**, E. Brewer, J. Kubiatowicz. "Abstractions for Scalable Operating Systems on Manycore Architectures". Work-In-Progress Poster, *22nd ACM Symposium on Operating Systems Principles (SOSP)*, Oct 2009

Invited Journal and Magazine Articles

[12] **P. Pearce**, R. Ensafi, F. Li, N. Feamster, V. Paxson, "Towards Continual Measurement of Global Network-Level Censorship", *IEEE Security & Privacy Magazine, Special Issue*, 2018

[13] **P. Pearce**, B. Jones, F. Li, R. Ensafi, N. Weaver, N. Feamster, V. Paxson, "Global Measurement of DNS Manipulation", *USENIX ;login:*, Winter 2017

Honors and Distinctions

Distinguished Practical Paper, IEEE Symposium on Security and Privacy	May 2015
CS Graduate Student Association President	May 2013 - May 2014
EECS Distinguished GSI Award	Apr 2014
CS Graduate Student Association Faculty Liaison	May 2012 - May 2013
NSF Honorable Mention (Operating Systems & Middleware)	Apr 2011
GAANN Fellowship	Aug 2010 - May 2011
Eugene L. Lawler Prize	Jun 2010
Fong Family Scholarship	May 2009
Eta Kappa Nu Member and Officer	May 2008 - May 2010
AMATYC Student Mathematics League Award	May 2007
Jack White Engineering Physics Award	May 2006
Arthur E. & Gladys P. Flum Award	May 2006
1st Place, ProgFest Team Programming Competition	Feb 2006
1st Place, ACM Regional Programming Comp., Community College Div.	May 2005

Academic Talks and Lectures

Dissertation: Methods and Systems for Understanding Large-Scale Internet Threats	
University of California, Berkeley	May 2018
Methods and Systems for Understanding Large-Scale Internet Threats	
University of Virginia (UVA)	Apr 2018
University of Massachusetts, Amherst	Apr 2018
Northeastern University (NEU)	Mar 2018
University of North Carolina, Chapel Hill (UNC)	Mar 2018
University of Maryland (UMD)	Mar 2018
University of California, Santa Barbara (UCSB)	Mar 2018
University of Chicago (UChicago)	Mar 2018
New York University, Tandon School of Engineering (NYU)	Mar 2018
Georgia Institute of Technology (Georgia Tech)	Feb 2018

University of Wisconsin, Madison (UWM) Feb 2018
Carnegie Mellon University (CMU) Feb 2018

Global Measurement of DNS Manipulation
University of Illinois at Urbana-Champaign ITI Seminar Oct 2017
Cloudflare Seminar Sep 2017
26th USENIX Security Symposium (USENIX) Aug 2017
University of Michigan Security Seminar Jul 2017

Understanding Threat Intelligence
Berkeley EECS Annual Research Symposium (BEARS) Feb 2016

Characterizing Large-Scale Click Fraud in ZeroAccess
Messaging, Malware and Mobile Anti-Abuse Working Group (M3AAWG) Oct 2015
21st ACM Conference on Computer and Communications Security (CCS) Nov 2014

Monetizing ZeroAccess: Inside the ZA-hosted Click-fraud Malware
Google Abuse Summit May 2014
Microsoft Digital Crime Conference (DCC) Mar 2014

Malware
Guest Lecture, CS161 Computer Security, UC Berkeley Jan 2014

Internet Freedom
Guest Lecture, CS161 Computer Security, UC Berkeley Apr 2013

AdDroid: Privilege Separation for Applications and Advertisers in Android
7th Symposium on Information, Computer and Communications Security (ASIACCS) May 2012

What's Clicking What? Techniques and Innovations of Today's Clickbots
8th Conf. on Detection of Intrusions and Malware & Vuln. Assessment (DIMVA) Jul 2012

Machine Structure (CS61C), 25 Lectures as Instructor
Undergraduate Course, UC Berkeley Jun-Aug 2010

Service & Leadership

PETS Program Committee: The 18th Privacy Enhancing Technologies Symposium 2017-2018

USENIX Security PC Scribe: 25th USENIX Security Symposium 2016

Student Leader: Computer Science GSI Conference Workshop Leader, UC Berkeley Aug 2015

Graduate Admissions: UC Berkeley 2014-2015
Reviewed applications for the security research area

Graduate Admissions: UC Berkeley 2013-2014
Reviewed applications for diversity

Student Leader: CS Graduate Student Association President, UC Berkeley 2013-2014

Student Leader: CS Graduate Student Association Officer, UC Berkeley 2010-2015

Student Leader: EECS Department Undergraduate Study Committee, UC Berkeley 2009-2011

Student Leader: Eta Kappa Nu Member and Officer, UC Berkeley 2008-2010

Mentoring: EECS Peers, UC Berkeley Fall 2013 - Fall 2015
Available as a drop-in mentor for graduate students in electrical engineering and computer science.

Research and Work Experience

University of California Berkeley — Berkeley, CA
Graduate Student Researcher with Vern Paxson — Aug 2010 - Present

Microsoft Research Silicon Valley — Mountain View, CA
Research Intern with Yinglian Xie — May 2012 - Aug 2012

University of California Berkeley — Berkeley, CA
Researcher with the Parallel Computing Lab — Jan 2009 - Jun 2010

University of California Berkeley — Berkeley, CA
Undergraduate Researcher with Laurent El Ghaoui — Jun 2008 - Dec 2008

Chaffey Community College Institutional Services — Rancho Cucamonga, CA
Supplemental Instruction Leader — Aug 2006 - Jun 2007

Chaffey Community College Math Success Center — Rancho Cucamonga, CA
Instructional Assistant — Dec 2005 - Jun 2007

Teaching Experience

Computer Security (CS161) Teaching Assistant — Jan 2013 - May 2013
University of California Berkeley — Berkeley, CA
Managed two discussion sections per week. Generated new content for homeworks, projects, lectures, and exams.
Student Evaluation Overall Teaching Effectiveness: 4.9/5.0
Outstanding EECS GSI Award

Computer Security (CS61C) Instructor — Jun 2010 - Aug 2010
University of California Berkeley — Berkeley, CA
Responsibilities included all lectures, course content, and administrative matters for 100 students.
Student Evaluation Overall Teaching Effectiveness: 6.3/7.0

Machine Structures (CS61C) Teaching Assistant — May 2009 - Aug 2009
University of California Berkeley — Berkeley, CA
Managed four labs and one discussion section each week. Was responsible for a CPU design project, several homeworks, and two lectures.
Student Evaluation Overall Teaching Effectiveness: 4.8/5.0

Open-Source Software

ZMap: Fast Internet-Wide Scanner — https://github.com/zmap/zmap
Co-Author and Co-Maintainer

ZDNS: Fast CLI Utility for Large-Scale DNS Lookups — https://github.com/zmap/zdns
Co-Author and Co-Maintainer