

Paul Pearce
Assistant Professor, Georgia Tech

CONTACT
INFORMATION

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Georgia Tech
Atlanta, GA 30332

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.

CONFERENCE
PUBLICATIONS

- [1] T Xu, G Goossen, H. K. Cevahir, S. Khodeir, Y. Jin, F. Li, S. Shan, S. Patel, D. Freeman, **P. Pearce**, “Deep Entity Classification: Abusive Account Detection for Online Social Networks”, *30th USENIX Security Symposium (USENIX)*, Aug 2021
- [2] K. Cohn-Gordon, G. Damaskinos, D. Neto, J. Cordova, B. Reitz, B. Strahs, D. Obenshain, **P. Pearce**, I. Papagiannis, “DELF: Safeguarding deletion correctness in Online Social Networks”, *29th USENIX Security Symposium (USENIX)*, Aug 2020
- [3] F. Kozlov, I. Yuen, J. Kowalczyk, D. Bernhardt, D. Freeman, **P. Pearce**, I. Ivanov, “Evaluating Changes to Fake Account Verification Systems”, *23rd International Symposium on Research in Attacks, Intrusions and Defenses (RAID)*, Oct 2020
- [4] V. Guo Li, M. Dunn, D. McCoy, G. M. Voelker, S. Savage, **P. Pearce**, K. Levchenko, “Reading the Tea leaves: A Comparative Analysis of Threat Intelligence”, *28th USENIX Security Symposium (USENIX)*, Aug 2019
- [5] M. Rezaeirad, B. Farinholt, H. Dharmdasani, **P. Pearce**, K. Levchenko, D. McCoy, “Schrodingers RAT: Profiling the Stakeholders in the Remote Access Trojan Ecosystem”, *27th USENIX Security Symposium (USENIX)*, Aug 2018
- [6] **P. Pearce**, “Methods and Systems for Understanding Large-Scale Internet Threats”, *PhD Dissertation, University of California, Berkeley*, Aug 2018. **SIGSAC Doctoral Dissertation Award Runner-Up**
- [7] **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
- [8] 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
- [9] **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
- [10] 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
- [11] 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**

- [12] **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
- [13] **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
- [14] **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
- [15] 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
- [16] 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
- [17] 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 [18] **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
- [19] **P. Pearce**, B. Jones, F. Li, R. Ensafi, N. Weaver, N. Feamster, V. Paxson, “Global Measurement of DNS Manipulation”, *USENIX ;login.*, Winter 2017

SERVICE & LEADERSHIP

CCS Program Committee:	28th Conf. on Computer and Comm. Security	2021
USENIX Security Program Committee:	30th USENIX Security Symposium	2021
IEEE S&P Program Committee:	42nd IEEE Symposium on Security and Privacy	2021
CCS Program Committee:	27th Conf. on Computer and Comm. Security	2020
IEEE S&P Program Committee:	41st IEEE Symposium on Security and Privacy	2020
USENIX Security Program Committee:	29th USENIX Security Symposium	2020
CCS Program Committee:	26th Conf. on Computer and Comm. Security	2019
RAID Program Committee:	22nd Sym. on Research in Attacks, Intrusions and Defenses	2019
WOOT Program Committee:	13th USENIX Workshop on Offensive Technologies	2019
PETS Program Committee:	20th Privacy Enhancing Technologies Symposium	2019-2020
PETS Program Committee:	19th Privacy Enhancing Technologies Symposium	2018-2019
PETS Program Committee:	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 <i>Reviewed applications for the security research area</i>	2014-2015
Graduate Admissions:	UC Berkeley <i>Reviewed applications for diversity</i>	2013-2014
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 **Georgia Institute of Technology** Atlanta, GA
Assistant Professor, School of Computer Science, College of Computing Aug 2019 - Present

Facebook, Inc Menlo Park, CA
Visiting Researcher, Site Integrity Sep 2018 - Jul 2019

University of California Berkeley Berkeley, CA
Graduate Student Researcher with Vern Paxson Aug 2010 - Aug 2018

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

EDUCATION **University of California, Berkeley** May 2013 - Aug 2018
 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

HONORS AND DISTINCTIONS **SIGSAC Doctoral Dissertation Award Runner-Up, ACM** Oct 2019
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

TEACHING
EXPERIENCE

Introduction to Information Security and Privacy, Instructor

Georgia Institute of Technology

Updated and taught course.

In Progress

Jan 2021 - Present

Atlanta, GA

Introduction to Information Security and Privacy, Instructor

Georgia Institute of Technology

Updated and taught course.

No teaching evaluations performed due to COVID-19

Jan 2020 - May 2020

Atlanta, GA

Measurement and Security, Instructor

Georgia Institute of Technology

Designed and taught course.

Student Evaluation Overall Teaching Effectiveness: 5.0/5.0

Aug 2019 - Dec 2019

Atlanta, GA

Computer Security (CS161) Teaching Assistant

University of California Berkeley

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

Jan 2013 - May 2013

Berkeley, CA

Computer Security (CS61C) Instructor

University of California Berkeley

Responsibilities included all lectures, course content, and administrative matters for 100 students.

Student Evaluation Overall Teaching Effectiveness: 6.3/7.0

Jun 2010 - Aug 2010

Berkeley, CA

Machine Structures (CS61C) Teaching Assistant

University of California Berkeley

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

May 2009 - Aug 2009

Berkeley, CA

DISSERTATION
COMMITTEES

[1] Shan Chen. "Towards Secure Communication and Authentication: Provable Security Analysis and New Constructions", Georgia Institute of Technology, 2019.

OPEN-SOURCE
SOFTWARE

ZMap: Fast Internet-Wide Scanner

Co-Author and Co-Maintainer

<https://github.com/zmap/zmap>

ZDNS: Fast CLI Utility for Large-Scale DNS Lookups

Co-Author and Co-Maintainer

<https://github.com/zmap/zdns>