

AMIT LEVY

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Education

Expected 2018	PhD, Computer Science ; Stanford University
2016	MSc, Computer Science ; Stanford University
2010	MSc, Computer Science ; University of Washington
2009	BSc, Computer Science & Economics ; University of Washington

Industry Positions

2012-Present	CEO, Co-Founder , MemCachier
Summer '16	Software Engineer Intern , Google
Summer '10	Software Engineer Intern , Google
Summer '08	Software Engineer Intern , Google
Summer '07	Software Developer , Grameen Foundation

Research Projects

Tock OS	An operating system for Internet of Things devices. Tock provides safety and isolation on low-resources embedded devices through a combination of hardware and language protection features.
Hails	A framework for building secure extensible web platforms. Hails allows applications to integrate third-party code in a way that preserves data privacy and integrity.
Beetle	A flexible communication architecture for Bluetooth Low Energy. Beetle lets multiple applications share access to Bluetooth Low Energy peripherals safely without explicit coordination.
Stickler	Integrity preserving end-to-end web communication via untrusted middleboxes. Stickler allows publishers to guarantee end-to-end authenticity of content served from untrusted CDNs.
Comet	An extensible key-value store. Comet is an extensible distributed key-value storage service that enables application-specific customizations using a language sandbox for untrusted user code.

Publications

Conferences

1. Safely and Efficiently Multiprogramming a 64 kB Computer. Amit Levy, Daniel Giffin, Brad Campbell, Branden Ghena, Pat Pannuto, Prabal Dutta, Phil Levis. In proceedings of the ACM Symposium on Operating Systems Principles (SOSP) 2017.
2. Beetle: Flexible Communication for Bluetooth Low Energy. Amit Levy, James Hong, Laurynas Riliskis, Phil Levis, Keith Winstead. In The 14th International Conference on Mobile Systems, Applications and Services (MobiSys) 2016.
3. Eliminating Cache-based Timing Attacks with Instruction-based Scheduling. With Deian Stefan, Pablo Buiras, Edward Yang, Amit Levy, David Terei, Alejandro Russo, David Mazières. In The 18th European Symposium on Research in Computer Security (ESORICS) 2013.
4. A Library for Removing Cache-based Attacks in Concurrent Information Flow Systems. Pablo Buiras, Amit Levy, Deian Stefan, Alejandro Russo, David Mazières. In the 8th International Symposium on Trustworthy Global Computing (TGC) 2013.
5. Hails: Protecting Data Privacy in Untrusted Web Applications. Daniel Giffin, Amit Levy, Deian Stefan, David Terei, David Mazières, John Mitchell, Alejandro Russo. In Proceedings of OSDI, Los Angeles, USA, October 2012.
6. Addressing Covert Termination and Timing Channels in Concurrent Information Flow Systems. Deian Stefan, Alejandro Russo, Pablo Buiras, Amit Levy, John Mitchell, David Mazières. In Proceedings of ICFP, Copenhagen, Denmark . 2012.
7. Comet: An active distributed key-value store. Roxana Geambasu, Amit Levy, Tadayoshi Kohno, Arvind Krishnamurthy and Hank Levy. In Proceedings of OSDI, Vancouver, Canada, October 2010.
8. Vanish: Increasing Data Privacy with DHTs that forget. Roxana Geambasu, Tadayoshi Kohno, Amit Levy, Hank Levy. In Proceedings of the USENIX Security Symposium, Montreal, Canada, August 2009. Won the Outstanding Student Paper Award.

Workshops

9. The Case for Writing a Kernel in Rust. Amit Levy, Brad Campbell, Prabal Dutta, Branden Ghena, Phil Levis, Pat Pannuto. Asia-Pacific Workshop on Systems (APSYS), Mumbai, India, 2017.
10. Ownership is Theft: Experiences Building an Embedded OS in Rust. Amit Levy, Michael Andersen, Brad Campbell, David Culler, Prabal Dutta, Branden Ghena, Phil Levis, Pat Pannuto. Programming Languages and Operating Systems (PLOS), Monterey, California, 2015.
11. Stickler: Defending Against Malicious CDNs in an Unmodified Browser. Amit Levy, Henry Corrigan-Gibbs, Dan Boneh. In Web 2.0 Security & Privacy (W2SP), San Jose, California, 2015.

Demos

12. Rebooting the Embedded System. Amit Levy, Brad Campbell, Branden Ghena, Shane Leonard, Pat Pannuto, Phil Levis and Prabal Dutta. In Proceedings of SenSys, Stanford, USA, November 2016.
13. A networked embedded system platform for the post-mote era. With Pat Pannuto, Michael Andersen, Thomas Bauer, Brad Campbell, Amit Levy, David Culler, Phil Levis. In Proceedings of SenSys, Memphis, USA, November 2014.

14. Making Web Applications -XSafe. Amit Levy, David Terei, Deian Stefan, David Mazières. In Proceedings of Haskell Symposium, Chalmers, Sweden, September 2014.
15. Building secure systems with LIO. With Deian Stefan, Amit Levy, Alejandro Russo, David Mazières. In Proceedings of Haskell Symposium, Chalmers, Sweden, September 2014.

Invited

16. Security and the average programmer. Daniel Giffin, Stefan Heule, Amit Levy, David Mazières, John Mitchell, Alejandro Russo, Amy Shen, Deian Stefan, David Terei, Edward Yang. In Proceedings of Conference on Principles of Security and Trust (POST). April, 2014.

Non-Refereed

17. Blade: A Data Center Garbage Collector. David Terei, Amit Levy. Compute Research Repository (CoRR), 2015.
18. New directions for self-destructing data systems. Roxana Geambasu, Tadayoshi Kohno, Arvind Krishnamurthy, Amit Levy, Hank Levy, Paul Gardner, Vino Moscaritolo. University of Washington, Tech. Rep 2013.

Representative Software

Tock	A secure embedded operating system for microcontrollers
Hails	A framework for building secure exensible web platforms
Beetle	A Bluetooth based data and control plane for the Internet of Things
Stickler	End-to-end integrity for content served through a CDN
Simple	A flexible Haskell web application framework

Talks

Tock

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| November 2017 | SOSP 2017. Shanghai, China. |
| August 2017 | APSys 2017. Mumbai, India. |
| August 2017 | Intel/NSF CSP Security Workshop. Hillsboro, OR. |
| June 2017 | Secure Internet of Things Project Retreat. Santa Cruz, CA. |
| July 2016 | Google. Mountain View, CA. |
| January 2016 | Analog Devices. Wilmington, MA. |
| October 2015 | PLOS 2015. Monterey, CA. |
| April 2015 | Stanford Security Forum. Stanford, CA. |

Beetle

June 2016	Mobisys 2016. Singapore.
June 2016	Stanford Security Internet of Things Seminar. Stanford, CA.
<i>Hails</i>	
September 2014	Haskell Symposium. Göteborg, Sweden.
April 2014	Heroku Tech Talk. San Francisco, CA.
November 2013	UW CSE Systems Seminar. Seattle, WA.
November 2012	CRASH PI Meeting. San Diego, CA.
April 2012	Stanford Security Forum. Stanford, CA.

Teaching Experience

Stanford University

Spring '14	Computer and Network Security (CS155) , Teaching assistant
Spring '13	Computer and Network Security (CS155) , Teaching assistant

University of Washington

Winter '09	Programming Languages (CSE 341) , Teaching assistant
Fall '09	Programming Languages (CSE 341) , Teaching assistant
Spring '08	Web Programming (CSE 190M) , Teaching assistant
Winter '08	Computer Programming II (CSE 143)
Fall '07	Computer Programming II (CSE 143)
Summer '07	Computer Programming II (CSE 143)
Spring '07	Computer Programming II (CSE 143)

Service

2014-2017	<i>Prisoner Reentry Network</i> Board member
2013-2014	Stanford CS PhD admissions committee

References

- David Mazières
- Phil Levis
- Prabal Dutta
- Dan Boneh