# Liz Izhikevich

# RESEARCH OVERVIEW

My research brings a data-driven approach to understanding and improving the Internet's performance and security. I build systems that collect data about network, operator, and attacker behaviors. I use quantitative analysis, including rigorous statistics, on the data my systems collect to surface operational challenges and threats.

## EDUCATION

Ph.D. in Computer Science, Stanford University	2018-2024
<ul> <li>Dissertation: "A Comprehensive and Real-Time View of the Internet Service Ecosystem"</li> <li>Advisor: Zakir Durumeric</li> </ul>	
M.S. in Computer Science, Stanford University	2023
M.S. in Computer Science, University of California, San Diego – Thesis: "Building and Breaking Burst-Parallel Systems" – Advisors: Geoff Voelker and George Porter	2017-2018
<b>B.S. in Computer Science</b> , University of California, San Diego	2014-2017

# Positions

Assistant Professor, Electrical and Computer Engineering, University of California, Los Angeles July 2024–Present
 Research Intern, Censys June 2024–Present
 Graduate Research Fellow, Netflix June 2023–May 2024

# HONORS AND AWARDS

• EECS Rising Star, International Recognition	2023
Community Impact Award, Stanford University	2023
• Student Services Award, Stanford University Computer Science Department	2023
Community Contribution Paper Award, ACM Internet Measurement Conference	2022
Graduate Research Fellowship, National Science Foundation ("NSF GRFP")	2018
• Graduate Fellowship in Science and Engineering, Stanford University ("Stanford SGF")	2018
• Department Award for Excellence in Teaching, UC San Diego	2018

† indicates mentee, \* indicates co-first authorship

## **Conference Proceedings**

- [1] K. Izhikevich<sup>†</sup>, G. Voelker, S. Savage, and L. **Izhikevich**, "Using Honeybuckets to Characterize Serverless Storage Scanning in the Wild", in *IEEE European Symposium on Security and Privacy*, 2024.
- [2] L. Izhikevich, M. Tran<sup>†</sup>, K. Izhikevich<sup>†</sup>, G. Akiwate, and Z. Durumeric, "Democratizing LEO Satellite Network Measurement", in *ACM SIGMETRICS/IFIP Performance*, 2024.
- [3] L. Izhikevich, M. Tran<sup>†</sup>, M. Kallitsis, A. Fass, and Z. Durumeric, "Cloud Watching: Understanding Attacks Against Cloud-Hosted Services", in *Proceedings of the 23rd ACM Internet Measurement Conference*, 2023.
- [4] L. Izhikevich, G. Akiwate, B. Berger<sup>†</sup>, S. Drakontaidis<sup>†</sup>, A. Ascheman<sup>†</sup>, P. Pearce, D. Adrian, and
   Z. Durumeric, "ZDNS: A Fast DNS Toolkit for Internet Measurement", in *Proceedings of the 22nd ACM Internet Measurement Conference*, \*Community Contribution Award\*, 2022.
- [5] L. Izhikevich, R. Teixeira, and Z. Durumeric, "Predicting IPv4 Services Across All Ports", in *Proceedings of the ACM SIGCOMM Conference*, 2022.
- [6] M. Ziv<sup>†</sup>, L. Izhikevich, K. Ruth, K. Izhikevich<sup>†</sup>, and Z. Durumeric, "ASdb: A System for Classifying Owners of Autonomous Systems", in *Proceedings of the 21st ACM Internet Measurement Conference*, 2021.
- [7] J. Cable\*<sup>†</sup>, D. Gregory\*<sup>†</sup>, L. Izhikevich\*, and Z. Durumeric, "Stratosphere: Finding Vulnerable Cloud Storage Buckets", in *Proceedings of the 24th International Symposium on Research in Attacks*, *Intrusions and Defenses*, 2021.
- [8] L. Izhikevich, R. Teixeira, and Z. Durumeric, "LZR: Identifying Unexpected Internet Services", in *30th* USENIX Security Symposium, 2021.
- [9] G. Wan, L. Izhikevich, D. Adrian, K. Yoshioka, R. Holz, C. Rossow, and Z. Durumeric, "On the Origin of Scanning: The Impact of Location on Internet-Wide Scans", in ACM Internet Measurement Conference, 2020.
- [10] L. Ao, L. **Izhikevich**, G. M. Voelker, and G. Porter, "Sprocket: A Serverless Video Processing Framework", in *Proceedings of the Ninth ACM Symposium on Cloud Computing*, 2018.
- [11] L. Izhikevich, E. Peterson, and B. Voytek, "Neural oscillatory power is not Gaussian distributed across time", in *Program No. 271.03. 2016 Neuroscience Meeting Planner*, 2016.

## Books

[12] N. Moshiri and L. Izhikevich, Design and Analysis of Data Structures. 2016, ISBN: 978-1981017232.

# Pre-Prints

- [13] L. Izhikevich, R. Teixeira, and Z. Durumeric, "Kronos: A System for Adaptively Tracking Internet Service Dynamics", *Under Submission to SIGCOMM*, 2024.
- [14] L. Izhikevich, R. Gao, E. Peterson, and B. Voytek, "Measuring the average power of neural oscillations", *bioRxiv*, 2018. eprint: https://www.biorxiv.org/content/early/2018/10/13/441626.full.pdf.

# Thesis

[15] L. Izhikevich, "Building and Breaking Burst-Parallel Systems", M.S. thesis, University of California, San Diego, 2018.

# PROFESSIONAL SERVICE

Technical Program Committees	
• Internet Measurement Conference	2023-2024
• IEEE Security and Privacy	2023
• Symposium on Research in Attacks, Intrusions, and Defenses	2022-2023
• The Passive and Active Measurement Conference	2022
• IEEE Security and Privacy (External Reviewer)	2022
• USENIX Security (External Reviewer)	2019-2022
• Internet Measurement Conference (External Reviewer)	2019-2021
Department and University Service	
Data Science Faculty Search Committee, Stanford University	2022-2023
• Ethics & Society Review of HAI Seed Grants Committee, Stanford University	2022
Chair of Ph.D. Applicant Support Program, Stanford University	2021-2023
• Ph.D. Admissions Committee, Computer Science, Stanford University	2019-2022

# TEACHING

• Instructional Assistant at Stanford University CS356: Topics in computer Networking and Security, https://cs356.stanford.edu/	Winter 2022
• Co-Creator/Co-Lecturer/Instructional Assistant at Stanford University CS249i: The Modern Internet, https://cs249i.stanford.edu/	Fall 2021
• Instructional Assistant/Discussion Section Leader at UC San Diego CSE100: Advanced Data Structures in C++, assisted 4 times and textbook author	Fall 2015–Winter 2017
• Instructional Assistant/Discussion Section Leader at UC San Diego CSE8B: Introduction to Programming in Java, Part 2	Spring 2017
• Instructional Assistant/Discussion Section Leader at UC San Diego <i>CSE12: Introduction to Data Structures</i>	Fall 2017
• Instructional Assistant/Discussion Section Leader at UC San Diego CSE8A: Introduction to Programming in Java, Part 1	Winter 2018

# Mentoring

(those who have published a peer-reviewed article as part of their independent study)	
• Manda Tran (M.S.)	2021-2023
• Anna Ascheman (B.S)	2022
• Briana Berger (B.S/M.S.)	2021 - 2022
• Spencer Drakontaidis (B.S.)	2021 - 2022
• Jack Cable (B.S.)	2020-2021
• Drew Gregory (B.S.)	2020-2021
• Maya Ziv (M.S.)	2020 - 2021
• Katherine Izhikevich (B.S/M.S.)	2018–Current

# References

## Zakir Durumeric

Assistant Professor of Computer Science Stanford University

#### Geoffrey Voelker

Professor of Computer Science and Engineering University of California, San Diego

### Stefan Savage

Professor of Computer Science and Engineering University of California, San Diego

#### Renata Cruz Teixeira

Former Director of Research; Current Senior Research Scientist Inria, Paris; Netflix