James Larisch

✉ james@jameslarisch.com
🌐 https://jameslarisch.com/

Education

2017–2024 **PhD, Computer Science**, *Harvard University*, Cambridge, MA
Advisor: Eddie Kohler
Committee: Eddie Kohler, Minlan Yu, Stephen Chong, Christo Wilson

2017–2020 **MS, Computer Science**, *Harvard University*, Cambridge, MA
Advisor: James Mickens

2012–2017 **BS, Computer Science**, *Northeastern University*, Boston, MA
Magna Cum Laude
With Honors

Honors & Awards

2022 **Honorable Mention - Best Paper - Hammurabi**, *ACM CCS 2022*

2019 **NSF Graduate Research Fellowship**, *National Science Foundation*

2017 **Chen Graduate Student Research Fellowship**, *Harvard University*

2017 **IEEE Cybersecurity Award for Innovation - CRLite**, *IEEE SecDev 2017 & MITRE*

2017 **Undergraduate Research Award**, *Northeastern University, CCIS*

2012 **Fellows Scholarship**, *Northeastern University, CCIS*

2012 **Excellence Scholarship**, *Northeastern University*

Refereed Publications

SIGCOMM 2024 **James Larisch**, Timothy Alberdingk-Thijm, Suleman Ahmad, Peter Wu, Tom Arnfeld, and Marwan Fayed. "**Topaz: Declarative and Verifiable Authoritative DNS at CDN-Scale.**" In ACM Special Interest Group on Data Communication (SIGCOMM). 2024.

HotNets 2023 **James Larisch**, Waqar Aqeel, Taejoong Chung, Eddie Kohler, Dave Levin, Bruce M. Maggs, Bryan Parno, and Christo Wilson. "**No Root Store Left Behind**" In ACM Workshop on Hot Topics in Networks (HotNets). 2023.

CCS 2022 **James Larisch**, Waqar Aqeel, Michael Lum, Yaelle Goldschlag, Kasra Torshizi, Leah Kannan, Yujie Wang, Taejoong Chung, Dave Levin, Bruce M. Maggs, Alan Mislove, Bryan Parno, and Christo Wilson. "**Hammurabi: A Framework for Pluggable, Logic-Based X.509 Certificate Validation Policies.**" In ACM SIGSAC Conference on Computer and Communications Security (CCS). 2022.

FCS 2020 Waqar Aqeel, Zachary Hanif, **James Larisch**, Olamide Omolola, Mislove, and Christo Wilson. "**CRLite: A Scalable System for Pushing All TLS Revocations to All Browsers.**" In 2017 IEEE Symposium on Security and Privacy (SP), pp. 539–556. IEEE, 2017.

ManLang 2018 **James Larisch**, James Mickens, and Eddie Kohler. "**Alto: Lightweight VMs Using Virtualization-aware Managed Runtimes.**" In Proceedings of the 15th International Conference on Managed Languages & Runtimes, pp. 1–7. 2018.

Oakland 2017 **James Larisch**, David Choffnes, Dave Levin, Bruce M. Maggs, Alan Mislove, and Christo Wilson. **"CRLite: A Scalable System for Pushing All TLS Revocations to All Browsers."** In 2017 IEEE Symposium on Security and Privacy (SP), pp. 539–556. IEEE, 2017.

Research Adoption & Coverage

2024 How we prevent conflicts in authoritative DNS configuration using formal verification. *Cloudflare Blog.*

2020 Introducing CRLite: All of the Web PKI's revocations, compressed. *Mozilla Security Blog.*

Teaching & Mentoring

2022-2023 **InTouch Peer**, *InTouch Peer-to-Peer Student Support Group*, Harvard

2020 **Undergraduate Research Mentor**, *Harvard Women in Computer Science*, Systems Group

Fall 2018 **Teaching Fellow**, *CS263: Systems Security*, James Mickens

Work Experience

2024-Present **Research Engineer**, *Cloudflare*, Remote

Designed and deployed new DNS edge microservice in Go that handles over 1M requests per second globally.

Invented new Lisp-based programming language that reduces deployment time of DNS changes by over 100x.

Formally verified all DNS changes using Racket, which prevents 1-3 network incidents a month.

2021-2022 **Research Engineer Intern**, *Cloudflare*, Remote

2016 **Software Engineer Co-op**, *Sonian*, Waltham, MA

Reduced incident debugging time from hours to minutes by creating the company's first request-tracing system.

2015 **Software Engineer Co-op**, *Gem.co*, Los Angeles, CA

Deployed webhook API product, which sent HTTP requests to customer endpoints upon Bitcoin blockchain events.

Reduced blockchain data retrieval times by 2x by forking and running a modified Bitcoin node instance in Ruby.

2014 **Software Engineer Co-op**, *HubSpot*, Cambridge, MA

Reduced analytics event processing time from 60-90m to 5-15s by converting bloated Hadoop pipeline to Kafka.

Designed traffic simulation tool using Java that prevented a major analytics incident months before it happened.

2013 **Software Engineer**, *Focused Coaching*, Morganville, NJ

- Sole developer of online SAT score aggregation platform written using Ruby-on-Rails.

Community

2018 **Technical Advisory Volunteer**, *ACLU Massachusetts*

Demystified privacy and security concerns at community "Crypto Parties".

2018 **Technical Mentor**, *YouthCITIES*
Mentored high school students building healthcare-focused startup prototypes.