James D. Kasten, Jr.

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Software Engineer - security and PKI expert. Proven lead developing secure systems in heavily regulated settings.

EDUCATION

University of Michigan, MS, PhD, Computer Science   August 2010 – December 2015
- Thesis: Server Authentication on the Past, Present and Future Internet
- GPA: 4.00/4.00

Vanderbilt University, BA, Economics and Computer Science   August 2006 – May 2010
- Computer Science Program Award 2010
- GPA: 3.96/4.00; *summa cum laude*

RELEVANT EMPLOYMENT HISTORY

Snowflake – San Mateo, CA
Senior Software Engineer II   November 2024 – Present
- Infrastructure Security Team

Google – Mountain View/Sunnyvale, CA
Staff Software Engineer   October 2020 – November 2024
- Technical Lead and Manager of the Google Trust Services (GTS) Software Team
  - Launched public ACME endpoint and became the third largest publicly trusted certificate authority (CA) [1]
  - Coordinate technical direction of TLS with teams in the Bay Area, New York, Zürich, London, and Warsaw
  - Serve as a member of GTS' Policy Authority - June 2022 – present
    - Led GTS' most critical public responses [2, 3] and received industry recognition [4]
  - Received Cloud Tech Impact Award in March 2024 and gStar "Secure the Planet" Award in July 2024

Senior Software Engineer   April 2018 – October 2020
- Technical Lead of the GTS Software Team
  - Launched full RFC 8555 and domain validation support enabling Google customers to issue certificates
  - Received Feat of Engineering Award in March 2019
- Co-author of RFC 8555 (ACME) - protocol now used for over 50% of all TLS certificates on the Internet [1]

Software Engineer   November 2015 – April 2018
- Designed and implemented Google Trust Services' ACME-based CA in Golang and C++
- Automated away existing manual certificate issuance workloads via custom ACME challenges for Google internally

Electronic Frontier Foundation – San Francisco, CA
Consultant   November 2014 – July 2015
- Lead developer of the ACME client, Certbot; the client was used by 49% of all IPs with Let's Encrypt in 2019 [5]

University of Michigan – Ann Arbor, MI
STIET Fellow, GSI, GSRA   August 2010 – November 2015
- Founding team member of ISRG's CA, Let's Encrypt, the world's largest publicly trusted CA [1, 5]

SELECT PUBLICATIONS

[RFC 8555: Automatic Certificate Management Environment (ACME)](#)
    Richard Barnes, Jacob Hoffman-Andrews, Daniel McCarney, *James Kasten*
    Internet Engineering Task Force, March 2019

[Building Secure and Reliable Systems: Case Study: Designing, Implementing, and Maintaining a Publicly Trusted CA](#)
    Andy Warner, *James Kasten*, Rob Smits, Piotr Kucharski, and Sergey Simakov
    O'Reilly, April 2020, pp. 233-241

[Let's Encrypt: An Automated Certificate Authority to Encrypt the Entire Web](#)
    Josh Aas, Richard Barnes, Benton Case, Zakir Durumeric, Peter Eckersley, Alan Flores-Lopez, J. Alex Halderman,
    Jacob Hoffman-Andrews, *James Kasten*, Eric Rescorla, Seth Schoen, and Brad Warren
    ACM Conference on Computer and Communications Security (CCS), November 2019

[Neither Snow Nor Rain Nor MITM... An Empirical Analysis of Email Delivery Security](#)
    Zakir Durumeric, David Adrian, Ariana Mirian, *James Kasten*, Kurt Thomas, Vijay Eranti, Nicholas Lidzborski, Elie
    Bursztein, Michael Bailey, and J. Alex Halderman
    ACM Internet Measurement Conference (IMC), October 2015 - ***IRTF Applied Networking Research Prize (ANRP)***

[The Matter of Heartbleed](#)
    Zakir Durumeric, Frank Li, *James Kasten*, Johanna Amann, Jethro Beekman, Mathias Payer,
    Nicolas Weaver, David Adrian, Vern Paxson, Michael Bailey, and J. Alex Halderman
    Proc. 14th Internet Measurement Conference (IMC '14), November 2014 - ***Best Paper Award***