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

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## 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*
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## RELEVANT EMPLOYMENT HISTORY

### Google – Mountain View/Sunnyvale, CA

#### Staff Software Engineer

October 2020 – Present

- Technical Lead and Manager of the Google Trust Services (GTS) Software Team
  - Launched public ACME endpoint and became fourth 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]
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## 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*