

# Benjamin Kim

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[Google Scholar](#)

[Website](#)

## EDUCATION

|                                                                                                             |                                             |
|-------------------------------------------------------------------------------------------------------------|---------------------------------------------|
| <b>Massachusetts Institute of Technology</b><br><i>Ph.D. in Electrical Engineering and Computer Science</i> | Cambridge, MA<br><i>Jun. 2026 – Present</i> |
| <b>University of Illinois Urbana-Champaign</b><br><i>M.S. in Electrical and Computer Engineering</i>        | Urbana, IL<br><i>Aug. 2025 – May 2026</i>   |
| <b>University of Illinois Urbana-Champaign</b><br><i>B.S. in Computer Engineering, Minor in Mathematics</i> | Urbana, IL<br><i>Aug. 2021 – May 2025</i>   |

## RESEARCH EXPERIENCE

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| <b>Massachusetts Institute of Technology</b><br><i>Graduate Research Assistant</i>   Supervised by Muriel Médard                                                                                   | Cambridge, MA<br><i>Jun. 2026 – Present</i>                             |
| <b>Harvard University</b><br><i>Research Fellow</i>   Supervised by Flavio du Pin Calmon                                                                                                           | Cambridge, MA<br><i>Jun. 2026 – Present</i>                             |
| <b>Amazon Science</b><br><i>Student Collaborating Researcher</i>                                                                                                                                   | Remote<br><i>Jan. 2026 – Present</i>                                    |
| <b>UIUC Coordinated Science Laboratory</b><br><i>Visiting Graduate Researcher</i>   Supervised by Daniel Alabi<br><i>Graduate Research Assistant</i>   Supervised by Lav Varshney and Daniel Alabi | Urbana, IL<br><i>May. 2026 – Present</i><br><i>Aug. 2025 – May 2026</i> |
| <b>MIT Lincoln Laboratory</b><br><i>Research Intern</i>   Tactical Edge Communications Group 62                                                                                                    | Lexington, MA<br><i>Jun. 2025 – Sep. 2025</i>                           |
| <b>MIT Research Laboratory of Electronics</b><br><i>Research Assistant</i>   Supervised by Muriel Médard                                                                                           | Cambridge, MA<br><i>Jun. 2022 – Aug. 2025</i>                           |

## AWARDS AND FELLOWSHIPS

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|--------------------------------------------------------------------------------------|-----------|
| <b>Irwin and Joan Jacobs Presidential Fellowship</b> , MIT                           | Mar. 2026 |
| <b>NSF Graduate Research Fellowship</b> , National Science Foundation                | Apr. 2025 |
| <b>Edward C. Jordan Award</b> , for outstanding undergraduate academics and research | Apr. 2025 |
| <b>CRA Outstanding Undergraduate Researcher Award Finalist</b> 1 of 30 in NA         | Jan. 2025 |
| <b>UIUC Outstanding Senior (Homecoming Court) Finalist</b> 40 out of 9000 seniors    | Jul. 2024 |
| <b>Donald L. Bitzer and H. Gene Slottow Creativity Award</b>                         | Apr. 2024 |

## PUBLICATIONS

- [10] TVMARK: Multi-Bit Text Watermarking across Distortion Regimes  
**Benjamin D. Kim**, Wanrong Zhang, Weitong Ruan, Lav R. Varshney, Daniel Alabi  
*Submitted to NeurIPS, 2026*
- [9] Optimal Guarantees for Auditing Rényi Differentially Private Machine Learning  
**Benjamin D. Kim**, Lav R. Varshney, Daniel Alabi  
*Submitted to NeurIPS, 2026*  
*TPDP 2026 and ICML Workshop on Hypothesis Testing*
- [8] Scalable Multiterminal Key Agreement via Error-Correcting Codes  
**Benjamin D. Kim**, Daniel Alabi, Lav R. Varshney  
*IEEE Information Theory Workshop (ITW), 2026*
- [7] Revisiting the Interface between Error and Erasure Correction in Wireless Standards  
Vipindev Adat Vasudevan, Homa Esfahanizadeh, **Benjamin D. Kim**, Laura Landon, Alejandro Cohen, Muriel Médard  
*IEEE Journal on Selected Areas in Communications, 2026*

- [6] An Efficient Hybrid Key Exchange Mechanism  
**Benjamin D. Kim**, Vipindev Adat Vasudevan, Alejandro Cohen, Rafael G. L. D'Oliveira, Thomas Stahlbuhk, Muriel Médard  
*IEEE Information Theory Workshop (ITW), 2025*
- [5] On the Benefits of Coding for Network Slicing  
Homa Esfahanizadeh, Vipindev Adat Vasudevan, **Benjamin D. Kim**, Shruti Siva, Jennifer Kim, Alejandro Cohen, Muriel Médard  
*IEEE ICC Workshops, 2024*
- [4] CRYPTO-MINE: Cryptanalysis via Mutual Information Neural Estimation  
**Benjamin D. Kim**, Vipindev Adat Vasudevan, Jongchan Woo, Alejandro Cohen, Rafael G. L. D'Oliveira, Thomas Stahlbuhk, Muriel Médard  
*IEEE ICASSP, 2024*
- [3] Cryptanalysis via Machine Learning Based Information-Theoretic Metrics  
**Benjamin D. Kim**, Vipindev Adat Vasudevan, Rafael G. L. D'Oliveira, Alejandro Cohen, Thomas Stahlbuhk, Muriel Médard  
*Preprint, 2025*
- [2] Leveraging AES Padding: dBs for Nothing and FEC for Free in IoT Systems  
Jongchan Woo, Vipindev Adat Vasudevan, **Benjamin D. Kim**, Rafael G. L. D'Oliveira, Alejandro Cohen, Thomas Stahlbuhk, Ken R. Duffy, Muriel Médard  
*Preprint, 2024*
- [1] CERMET: Coding for Energy Reduction with Multiple Encryption Techniques — It's easy being green  
Jongchan Woo, Vipindev Adat Vasudevan, **Benjamin D. Kim**, Rafael G. L. D'Oliveira, Alejandro Cohen, Thomas Stahlbuhk, Muriel Médard  
*Preprint, 2023*

## TALKS AND POSTERS

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### Cryptanalysis via Mutual Information Neural Estimation

- Talk at University of Illinois Electrical and Computer Engineering Senior Thesis Symposium Dec. 2024
- Poster at IEEE International Conference on Acoustics, Speech and Signal Processing 2024 Apr. 2024
- Poster at 2024 UIUC Undergraduate Research Symposium Apr. 2024
- Invited talk at 2024 Information Theory and Applications Workshop (ITA) Feb. 2024

### Efficient Hybrid Key Exchange Mechanisms

- Talk at IEEE Information Theory Workshop 2025 Sep. 2025

### Auditing Rényi Differentially Private Machine Learning

- Invited poster at 2026 Information Theory and Applications Workshop (ITA) Feb. 2026
- Invited poster at Coordinated Science Laboratory Annual Conference Feb. 2026
- Invited poster at CSL 75th Anniversary Research Showcase Mar. 2026
- Accepted poster at TPDP Workshop 2026 Jun. 2026
- Accepted poster at ICML Workshop on Hypothesis Testing Jul. 2026

## TEACHING AND OUTREACH

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### Teaching Assistant for Algorithms & Models of Computation

Dec. 2023 – Present

- CS/ECE 374, Algorithms course at UIUC
- Graduate Teaching Assistant (Fall 2025, Spring 2026)
- Undergraduate Teaching Assistant (Spring 2024, Fall 2024, Spring 2025)

### Allerton Conference Session Chair

Sep. 2025

- Ran Network Engineering session and introduced speakers