James Choncholas

Curriculum Vitae

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Software engineer specializing in privacy preserving machine learning, secure systems, and applied cryptography.

Education

2019–2025* **Doctor of Philosophy**, *Computer Science*, Georgia Institute of Technology

2012–2016 **Bachelor of Science**, *Electrical Engineering*, University of Wisconsin – Madison

Experience

August 2025 – Present **Software Engineer**, *Google*, New York, NY

Jun 2023 – Aug 2024 **Student Researcher**, *Google*, New York, NY
Developing novel cryptographic protocols and frameworks for privacy preserving machine learning using homomorphic encryption (HE) and multiparty computation.

Jun 2022 – Aug 2022 **Software Engineer Intern**, *Google*, Sunnyvale, CA
Technology sensing for network infrastructure at Google Cloud. Developed a hardware abstraction layer for next-generation network interface controller.

Feb 2021 – Apr 2022 **Student Researcher**, *Ericsson*, Atlanta, GA
Designed a cryptographic protocol and system for privacy preserving computer vision. Work published at Privacy Enhancing Technologies Symposium 2024 and two patents filed with the World Intellectual Property Organization.

Jun 2016 – Jul 2019 **Software Engineer (Full Time)**, *Sound Devices LLC*, Madison, WI
Technical lead on Xilinx FPGA/ARM based embedded devices which record media for production film. Cross-platform mobile app development. Product sales on the order of $10M annually.

Jun 2015 – Dec 2016 **Software Engineer Intern**, *Spacelabs Healthcare*, Madison, WI
Automated testing and software development for medical devices.

References

Advisor **Ada Gavrilovska**, *Georgia Institute of Technology*

Mentor **Karn Seth**, *Google*, New York

Mentor **Gregoire Phillips**, *Ericsson*, Santa Clara

Conference Papers

[1] James Choncholas, Stan Peceny, Amit Agarwal, Mariana Raykova, Baiyu Li, and Karn Seth. Hadal: Centralized label dp without a trusted party. In *IEEE Symposium on Security and Privacy (S&P)*, 2026.

[2] James Choncholas, Pujith Kachana, Mateus André, Phillips Gregoire, and Ada

Gavrilovska. Snail: Secure single iteration localization. In *Privacy Enhancing Technologies Symposium (PETS)*, 2024.

[3] James Choncholas, Ketan Bhardwaj, Vlad Kolesnikov, and Ada Gavrilovska. Angler: Dark pool resource allocation. In *ACM/IEEE Symposium on Edge Computing (SEC)*, 2023.

Workshop Papers

[4] James Choncholas, Ketan Bhardwaj, and Ada Gavrilovska. TGh: A TEE/GC hybrid enabling confidential FaaS platforms. In *Cryptology ePrint Archive*, 2023.

[5] James Choncholas, Ketan Bhardwaj, and Ada Gavrilovska. MPC benchmarking and optimization for edge systems. In *Semiconductor Research Corporation TECHCON*, 2021.

[6] James Choncholas, Ketan Bhardwaj, and Ada Gavrilovska. The performance argument for blockchain-based edge DNS caching. In *ACM/IEEE Symposium on Edge Computing (SEC)*, 2021.

[7] Ke-Jou Hsu, James Choncholas, Ketan Bhardwaj, and Ada Gavrilovska. DNS Does Not Suffice for MEC-CDN. In *ACM Workshop on Hot Topics in Networks (HotNets)*, 2020.

Posters

[8] James Choncholas, Pujith Kachana, Mateus André, Phillips Gregoire, and Ada Gavrilovska. Snail: Secure single iteration localization. In *ACM/IEEE Symposium on Edge Computing (SEC)*, 2023.

[9] James Choncholas, Ketan Bhardwaj, and Ada Gavrilovska. GeoENS: Blockchain-based infrastructure for service discovery at the edge. In *USENIX Workshop on Hot Topics in Edge Computing (HotEdge)*, 2020.

Patents

[10] James Choncholas and Gregoire Phillips. Systems and methods for localization offloading using flexible multi-party computation and split device network resources for preserving privacy, 2023. Patent No. WO2023105268A1.

[11] James Choncholas, Gregoire Phillips, Héctor Caltenco, and Ali El Essaili. Method and system to implement privacy-preserving collaborative semantic mapping, 2024. Patent No. WO2024057076A1.

Awards

[12] Cloud Research Credit Grant for Hadal project artifact evaluation, 2025. Google Cloud Platform.

[13] Cloud Research Credit Grant for Hadal project, 2024. Google Cloud Platform.

[14] Travel Grant, 2021. Symposium on Edge Computing.

[15] Presidents Fellowship, 2019-2024. Georgia Institute of Technology.

[16] Bruce W. Shand Engineering Scholarship, 2015, 2016. University of Wisconsin – Madison.

[17] Engineering Expo First Place Exhibitor, 2015. University of Wisconsin – Madison.

[18] Grainger Scholarship, 2013, 2014. University of Wisconsin – Madison.

Teaching

[19] Teaching Assistant. CS 8803 Blockchain and Cryptocurrencies with Vlad Kolesnikov, 2023.

[20] Teaching Assistant. CS 7210 Distributed Systems with Ada Gavrilovska, 2022.

Other

[21] Student Advisee – Pujith Kachana, 2023. Georgia Institute of Technology PURA Award.