

Title: Distributing Trust to Build Data-Leak-Proof Systems

Speaker: Dr. Adithya Vadapalli, University of Waterloo (<https://avadapal.github.io/>)

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Venue: KD-101, Department of Computer Science and Engineering

Abstract:

Over the past few decades, Internet use has grown precipitously worldwide. Today, over 4.7 billion people use social media; we go online for music, news, television, and movies and communicate with family and friends; essential day-to-day services like shopping, banking, and even health care are increasingly delivered virtually. Further, the COVID-19 pandemic has only accelerated these trends. On the one hand, shifting to online services increases efficiency and convenience; on the other hand, it has created an ecosystem of surveillance capitalism riddled with severe privacy threats. One way of protecting data is building systems such that no unauthorized entity can access the data they are not supposed to. For instance, building firewalls is one option. However, a more robust approach to tackling this problem is building so-called data-leak-proof systems, i.e., even if an authorized entity gets access to the data they are not supposed to, they cannot make any sense of it. This talk presents data-leak-proof systems using so-called "distributed trust" for privacy-preserving personalization, computation, and communication.

Bio:

Dr. Adithya Vadapalli is a Postdoctoral Fellow at the University of Waterloo under the mentorship of Ian Goldberg. Before that, he completed his Ph.D. from Indiana University, Bloomington, in 2021 under the supervision of Ryan Henry. His Ph.D. dissertation was on Distributed Point Functions and their applications to secure Multi-party computation. His primary research interests lie in Privacy Enhancing Technologies. His work has appeared in top Privacy and Security conferences like Proceedings on Privacy Enhancing Technology, USENIX and IEEE Symposium on Security and Privacy.