Toward practical and private online services

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Abstract

The designs of today's common online services (social networks, media streaming, messaging, email, etc.) are in conflict with privacy. Indeed, there have been many incidents (hacks, accidental disclosures, etc.) where private information has leaked.

My research aims to build systems that provide strong privacy guarantees and are practical (that is, have functionality and costs comparable to that of the status quo). In the talk, I will describe the challenges in building such systems and and how I address them. As an example, Popcorn is a Netflix-like media delivery system that provably hides (even from the content distributor) which movie a user is watching, is otherwise consistent with the prevailing commercial regime (copyrights, etc.), and achieves plausibly deployable performance (the per-request dollar cost is 3.87 times that of a non-private system).

Bio

Trinabh Gupta is a PhD candidate at The University of Texas at Austin. He is also a visiting academic in NYU's systems group. His research interests are in systems, security, and privacy, and he has worked on privacy-preserving online services, and failure detection in distributed systems. His advisors are Lorenzo Alvisi and Michael Walfish. Prior to being a PhD student he was a computer science undergraduate at Indian Institute of Technology Delhi (IITD).

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