Mathematics and CS Seminar

The Utility Cost of Privacy

Esfandiar Mohammadi

ETH Zurich

Host: Krzysztof Pietrzak

Privacy-enhancing systems have to strike a careful balance between a system's utility (i.e., its specified goal) and its degree of privacy protection. To achieve this utility-privacy balance, a rich body of work aims at tightly quantifying the degree of privacy protection, in particular under a continual usage of the system, which in many cases leads to a steady decline of the degree of privacy. Precisely quantifying this decline in privacy has proven to be a hard problem but is vital for a practical privacy assessment and thus for finding a system's utility-privacy balance. My research tackles both sides of the utility-privacy balance. First, I will talk about our recent method for quantifying the decline in privacy: we provably compute upper and lower bounds for the decline in privacy over a growing exposure for a large class of privacy-enhancing systems. Second, using this method, I will show how to tightly quantify the privacy decline caused by timing delays of a browser extension for deniable uploads and downloads, a system that we recently designed, implemented, and proved secure.

Wednesday, January 23, 2019 10:00am - 11:00am

Mondi Seminar Room 2, Central Building

This invitation is valid as a ticket for the ISTA Shuttle from and to Heiligenstadt Station. Please find a schedule of the ISTA Shuttle on our webpage: https://ista.ac.at/en/campus/how-to-get-here/ The ISTA Shuttle bus is marked ISTA Shuttle (#142) and has the Institute Logo printed on the side.

www.ista.ac.at | Institute of Science and Technology Austria | Am Campus 1 | 3400 Klosterneuburg