**Security and Privacy of Outsourced Data**

**and Computations**

**by**

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| **Date** | **:** | **1 Mar., 2018 (Thur.)** |
| **Time** | **:** | **~~11:00am – 12:00noon~~ 2:00pm – 3:00pm** |
| **Venue** | **:** | **Room 833, Ho Sin Hang Engineering Building** |
|  |  | **The Chinese University of Hong Kong** |

*Abstract*

Nowadays many users outsource their data and computation to cloud-service providers such as Amazon EC2, Google Cloud, and Microsoft Azure that are potentially untrusted or may be compromised. Meanwhile, companies are collecting more and more data from users so as to run machine-learning algorithms on that data to develop products and services. Despite of the great benefits of these techniques, they currently require users to give up control of their data and to trade off privacy for utility.

I will discuss several cryptographic techniques I have developed to address these issues. I will first talk about techniques for verifiable storage and computation that can be used to ensure the correctness of computations done in the cloud and services offered by cloud providers. I will then discuss privacy-preserving machine learning, which allows companies to execute machine-learning algorithms without learning users’ data. I will conclude with some thoughts on future applications of these new protocols to other domains.

*Biography*

Yupeng Zhang is a PhD student at the University of Maryland, working with Professors Charalampos Papamanthou and Jonathan Katz. His research is focused on applied cryptography, and his work on verifiable computation, privacy-preserving machine learning, and searchable encryption has been published at top security conferences. He is a recipient of Google PhD Fellowship and receives Outstanding Graduate Assistant Award of the University of Maryland.

**\*\* ALL ARE WELCOME \*\***

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