

CDISE Seminar

New quantization methods for extreme compression of high-dimensional vectors

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Skolkovo Innovation Center

Technopark, Building 3, Room 407



ABSTRACT:

I will discuss the problem of encoding high-dimensional vectors into a small number of bytes, typically between 4 and 32. In recent years, quantization-based methods such as *product quantization* of Jegou et al. have emerged as state-of-the-art, as they provide very good compression accuracy and on top of that allow fast evaluation of distances and scalar products between a compressed dataset and an uncompressed query vector. In the talk, I will briefly review the existing quantization schemes and present two new quantization approaches called *additive quantization* and *tree quantization* that surpass previous schemes in accuracy, especially for "deep descriptors", while retaining some of their speed characteristics. The talk will illustrate an interesting connection between this class of compression algorithms and Markov Random Field optimization, and will be based on joint works (CVPR14, CVPR15) with Artem Babenko.

Refreshments will be provided.

Non-Skoltech attendees should request access to the building in advance by sending their passport details to cdise.seminar@skoltech.ru.