

Forschungspraxis

# Index Coding & Coded Caching

Coded caching problem has two phases, placement phase and delivery phase.

For a fixed placement scheme, designing the delivery protocol is equivalent to the index coding problem.

Transforming a coded caching problem with coded placement to the corresponding index coding problem is a highly-interested topic and what is the optimal delivery scheme for a coded caching problem with coded placement is still an open problem.

References:

- [1] N. S. Karat, S. Samuel, and B. S. Rajan. Optimal error correcting index codes for some generalized index coding problems. *IEEE Transactions on Communications*, 67(2):929–942, 2019.
- [2] Z. Chen, P. Fan, and K. B. Letaief. Fundamental limits of caching: improved bounds for users with small buffers. *IET Communications*, 10(17):2315–2318, 2016.

## Prerequisites

- Linear Algebra
- Channel Coding (recommended)

## Advisors

Hedongliang Liu