# Capacity-achieving Locally List Decodable Codes

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**Abstract**

Locally decodable codes are error-correcting codes admitting highly efficient sublinear time decoding algorithms, while list decodable codes are error-correcting codes that can correct extremely large fraction of errors by outputting a short list of candidate messages. Starting with the seminal work of Goldreich and Levin that showed a local list decoding algorithm for Hadamard codes, locally decodable codes and list decodable codes have been two central objects of study in theoretical computer science.

In this talk, I will explain the notion of local list decoding and its motivations, and describe a recent line of work focused on designing capacity achieving locally list decodable codes admitting fast sublinear time list decoding algorithms.

Based on joint works with Brett Hemenway, Swastik Koppary, Shubhangi Saraf, and Mary Wootters.