

Forschungspraxis

Fano's Inequality: Applications in Communications and Beyond the Communication Problem

Information theory plays an indispensable role in the development of algorithm-independent impossibility results, both for communication problems and for seemingly distinct areas such as statistics and machine learning. While numerous information-theoretic tools have been proposed for this purpose, the oldest one remains arguably the most versatile and widespread: Fano's inequality.

References:

[1] An Introductory Guide to Fano's Inequality with Applications in Statistical Estimation. Jonathan Scarlett, Volkan Cevher. (and references within).

<https://arxiv.org/abs/1901.00555>

Please contact the supervisor for possible additional references, too.

Prerequisites

-Background and interest in Probability theory and stochastic processes, statistics and Information theory.

-An interest in a possible numerical simulation using MATLAB or any other numerical simulation environment (Python, Julia..etc)

-The exact starting date is flexible. But it should be sometime around summer 2021.

Advisors

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