

# Lecture 3: Information Inequalities

Tianpei Xie

Jan. 6th., 2023

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## 1.1 Entropy, Relative Entropy, and Mutual Information

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# 2 Information Inequalities

## 2.1 Chain Rules for Entropy, Relative Entropy, and Mutual Information

## 2.2 Han's Inequality

## 2.3 Sub-Additivity of Entropy and Relative Entropy

## 2.4 Duality and Variational Formulas

## 2.5 Optimal Transport

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## 2.7 The Brunn-Minkowski Inequality