



Research
Education
Outreach

CCA

Allievi Program

TUTORIAL IN DISCRETE MATHEMATICS

Fall 2021

Instructor: Stefano Favaro

Contact Information

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Office Hours: send me an email and we set up an appointment

Course Description

The course introduces some basic mathematical tools used in discrete probability theory, e.g. basic set theory and counting principles, recurrence relations, finite differences, basic combinatorial numbers, inclusion and exclusion principle, generating functions. Discrete probability is introduced through classical models arising from the experiment of flipping a coin, and generalizations thereof, and then formalized through its axiomatic formulation. Connections with classical (frequentist) statistics and Bayesian statistics are presented and discussed.

Prerequisites

Knowledge of elementary calculus is assumed.

Requirements and Grading

Formal requirements for the course include weekly problem sets, which are an essential part of the course and whose solutions are presented by students during classes, and a final exam.

The final exam consists in an oral presentation of a topic in discrete probability, or more general in discrete mathematics, with the topic being selected by the student according to his/her interests and in agreement with the instructor. The final grade will be a combination of the evaluation attained in the problem sets (80%) and the evaluation attained in the final exam (20%).

Textbooks

There is no required textbooks for the course.