

Ecaterina Sava-Huss
Assistant Professor of Mathematics
University of Innsbruck

Name / Email

Ecaterina Sava-Huss
Ecaterina.Sava-Huss@uibk.ac.at

Phone

+43 512 507 53871

Date

March 13, 2020

Topics for Bachelor Theses

Prerequisites

The courses *Stochastics 1* and *Stochastics 2* are needed for the topics that involve stochastic processes. The thesis can be written in the following language:

- Bachelor theses: german or english.
- Master theses: english.

Programming and Simulation: If you have good programming skills, there are several topics available that involve simulations (Python, R, or whatever you want) of random processes.

Possible Topics and Themes

1. Coupon collector's problem
2. Galton-Watson processes and population models (like infection spread)
3. Birth and death chains
4. Shuffling of cards
5. Markov chains and electrical networks
6. Simple random walks on integer lattices ([Not available anymore](#))
7. Erdős-Renyi random graphs
8. Expander graphs, zig-zag products of graphs