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

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