

Master thesis proposal

HMM modelling for the spread of the SARS–CoV–2 virus

Krzysztof Bartoszek

October 27, 2020

The aim of the project is to develop an HMM for the current spread of the SARS–CoV–2 virus. The HMM could be coupled with a SIR+ based compartmental model for the different types of statistics—confirmed cases, hospitalizations, deaths. The confirmed cases should be treated as a random sample from the whole population of infected and the probability of sampling should try to take into account the different testing strategies. The aim of the project would be to compare the spread of the virus in different countries (e.g. Czech Republic, Poland, Sweden, Italy, but other depending on the availability of data are possible) through regional (whenever possible) dynamics. For the thesis publicly available COVID–19 connected data will be used.