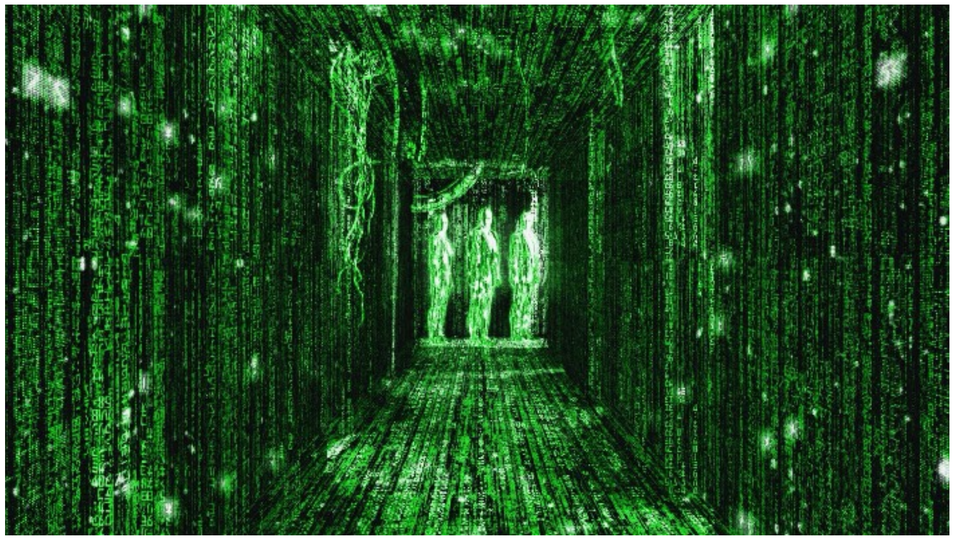
Simulation-based Inference



- The phenomena of the world are frequently investigated *in silico* - i.e. using complex computer simulations with great detail
- The simulators are controlled by a set of parameters that we want to infer based on the observations collected of the phenomena
- Complexity of the simulators often prohibits the access to the most important tool of statistical inference - likelihood function

Example

MA(2) model

- Simple time series model
- $x_t = w_t + t_1 w_{t-1} + t_2 w_{i-2}, \quad w_t \sim \text{Normal}(0,1)$