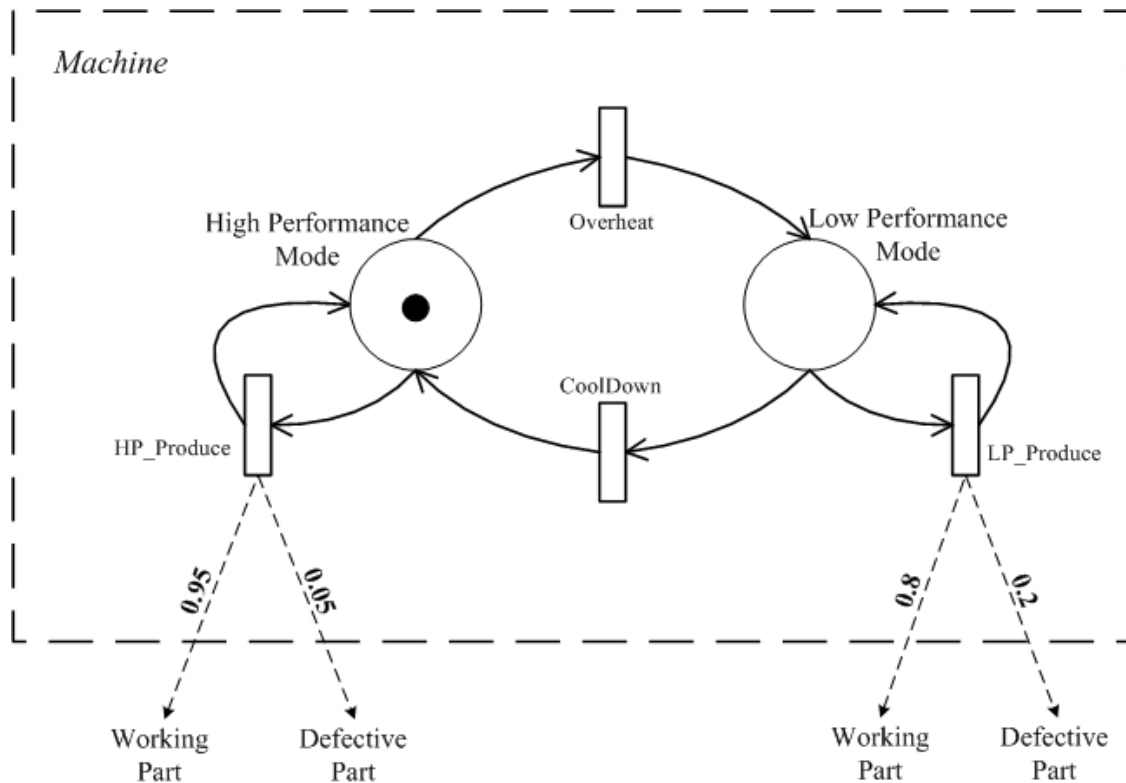


Applied Discrete Modelling

Semester Assignment “Machine Temperature”

The object of the semester assignment is a machine with two production modes that can produce defective and working parts. It will be used to apply the knowledge and implement the algorithms taught throughout the semester. Students will see the different levels of applicability of the methods and understand their features and shortcomings. The improvements and new developments in current research will be motivated and demonstrated.



The system is specified as follows:

The machine has two production modes and can produce parts which are either in working order or defective. In high performance mode, the machine produces a larger proportion of working parts, but also heats up. Switching to low performance mode allows the temperature to fall, but also reduces the proportion of working parts produced. The amount of time needed to produce a part is random, and is different for the high performance and low performance modes. Due to the terms of the guarantee or knowledge protection policies, the production manager is not allowed to open the machine for observation purposes. Therefore, the only thing that the production manager can observe is the sequence of defective and working parts produced. Nevertheless, as will be shown in the course, it is still possible to draw conclusions about the hidden internal states of the machine.