1. **Reverse-engineering the genetic regulatory network**

The first part of the method consists of inferring (or reverse-engineering) the genetic regulatory network. The method is based on the GENIE3[1] method. It uses a random forest regressor to define an importance factor to each possible edge within the network. Then an importance factor threshold needs to be selected. Every edge with an importance below this threshold is considered non-existing. Every edge with an importance above this threshold is considered as existing. It is important to state that the final genetic network must not contain a cycle. This is due to the nature of genes only regulating genes downstream of the DNA string.

1. **Recalculate gene expressions of unperturbed cells after introducing a knockout**

Once the genetic regulatory network has been inferred, it is possible to make predictions on the effects of genetic knockouts. The predictions are done by taking a genetic profile of an unperturbed cell and introducing a knockout (setting the expression to zero) and recalculating the genetic expressions following the genetic network.

1. **Calculating cell state proportions from genetic expressions**

When blablabla WIP

[1] https://journals.plos.org/plosone/article/file?id=10.1371/journal.pone.0012776&type=printable