Cultures of modelling

Data modelling

assume some stochastic model to have generated the data

e.g. linear regression logistic regression, GLM, QDA

Algorithmic modelling

<u>x</u> — black box — <u>y</u>

directly model the input-output relationship with a universal model

e.g. Neural Network, Random Forest

baseline truth / measurements

 $\underline{\mathbf{x}} \longrightarrow \mathbf{nature} \longrightarrow \underline{\mathbf{y}}$

Mechanistic modelling

physical laws

→ simulation

validate theories / find their parameters from data by simulation