

Machine Learning Methods in Visualisation for Big Data 2017

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Entering the Big Data Age

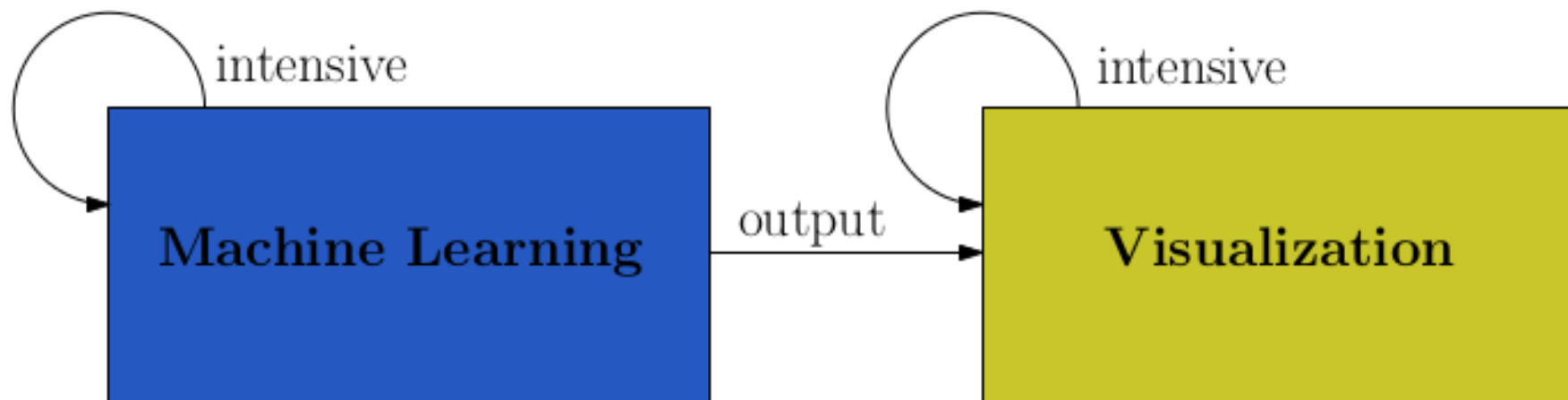
- Machine learning and visualisation methods have the same goal: finding interesting things in data
 - Machine learning – emphasis on algorithms
 - Visualisation – emphasis on interfaces/interaction
- Machine learning has the advantage of scalability in terms of the data sets it can handle
- Visualisation has the advantage of interactive data exploration

Why ML and Visualisation?

- Idea: Allow Interactive Visualisation Methods to Scale to Larger Data Sets
- Find a way to leverage the advantages of each approach
- How can we do this well?

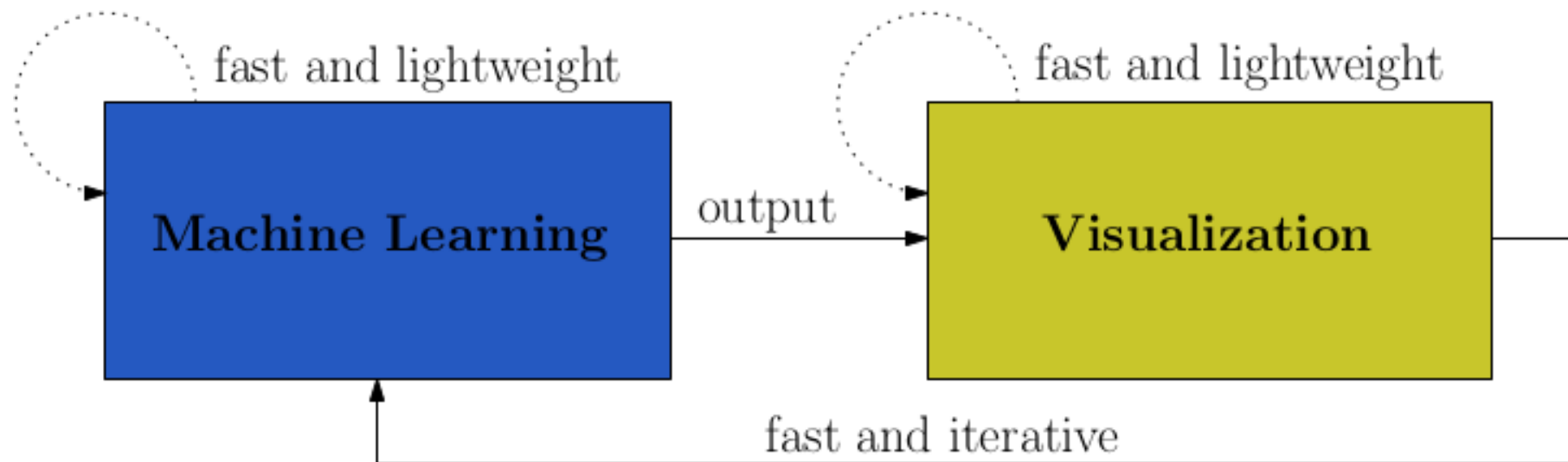
Visualisation as Output

- An easy way is to use machine learning as a preprocessing step
- In this way, summarize first and visualise second
- Issue: adjusting machine learning results



Steerable Machine Learning

- Visualisation and machine learning are integrated
- Quick approximate results give overview of data
- Once satisfied, run heavyweight process
- More fruitful partnership, fewer systems



Outline

- Supervised dimensionality reduction
- Methods for text data
- Methods for dynamic data
- HCI for dimensionality reduction
- Data lab: bring your own data to be analyzed with help from the presenters