Eric Pitman Summer Workshop in Computational Science

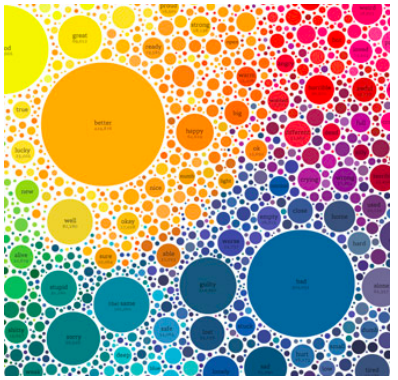
Intro to

...an introduction to R, statistics, programming, and getting to know datasets

CENTER FOR **COMPUTATIONAL RESEARCH**

University at Buffalo
The State University of New York

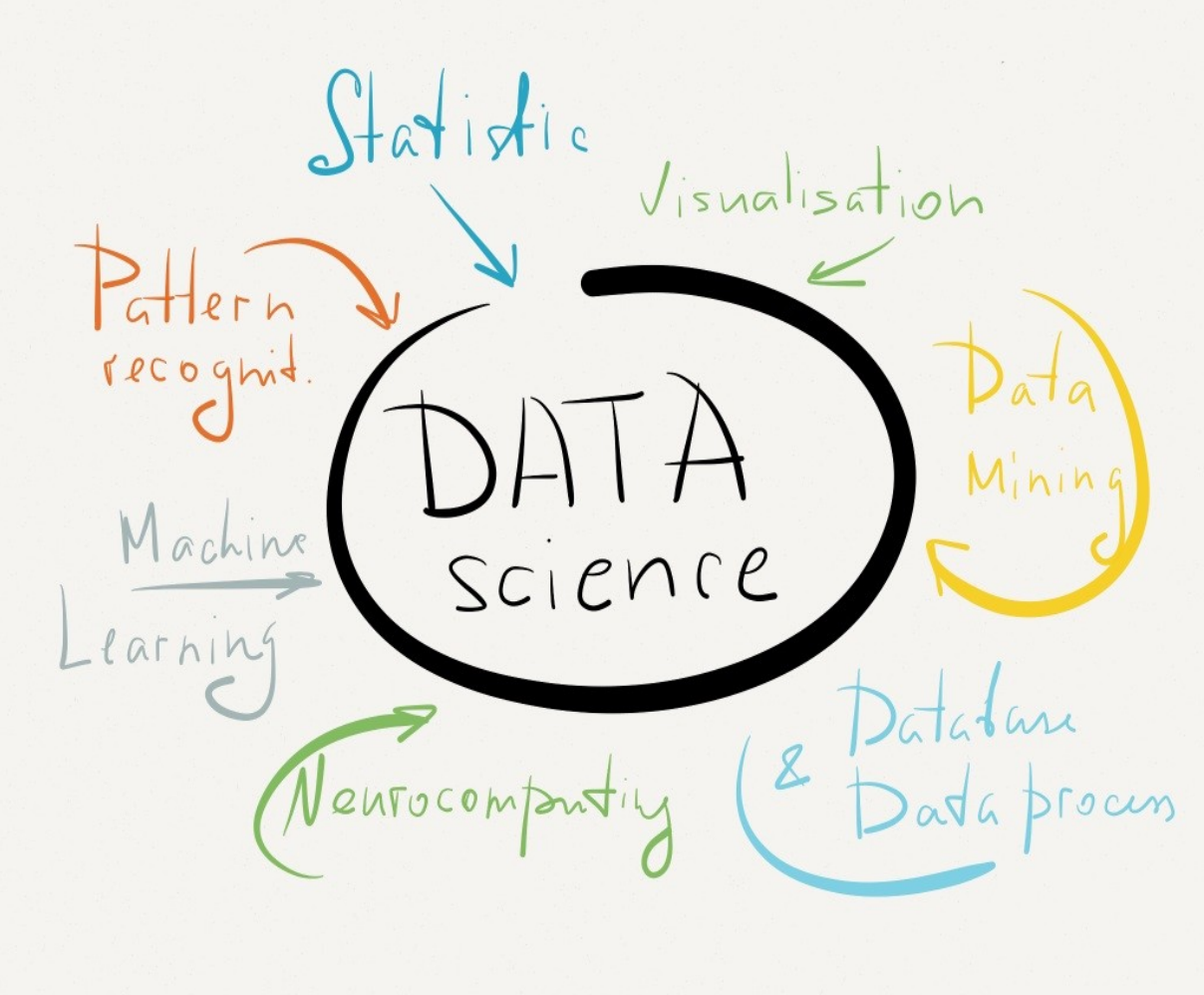
Our Plan for the Workshop



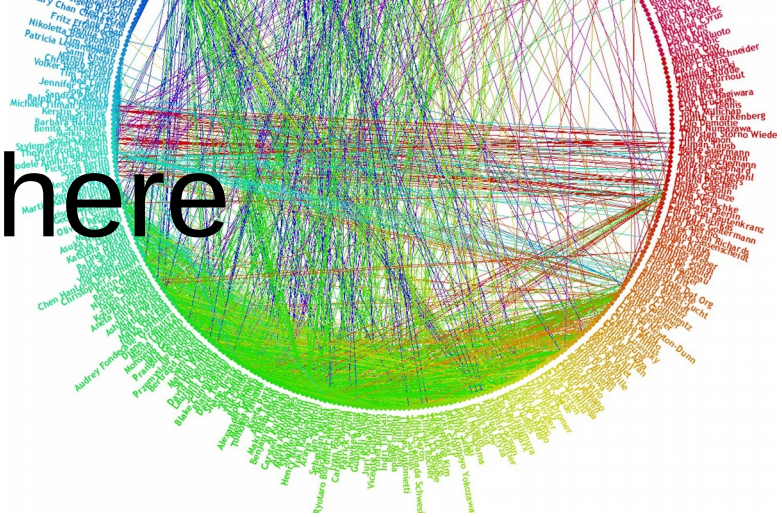
- Introduce the R language
- Do some programming
- Tours, demos, guest lectures: sample some science & engineering
- Examine, model, and visualize datasets
- Read about, discuss data science
- Project: explore materials science design questions

Our (Informal) Plan for the Workshop

- No grades
- Collaborate
- Respect
- Learn something!
- Life is open internet (so is the workshop)



Data is Everywhere



- For example:
  - Science/engineering/medicine
  - Environmental science/Social science/Law enforcement
  - Finance and marketing
  - Social media
- How do we come to an understanding of what a dataset contains?
- Can we draw conclusions from a dataset?
- Let's taste the complexities for ourselves

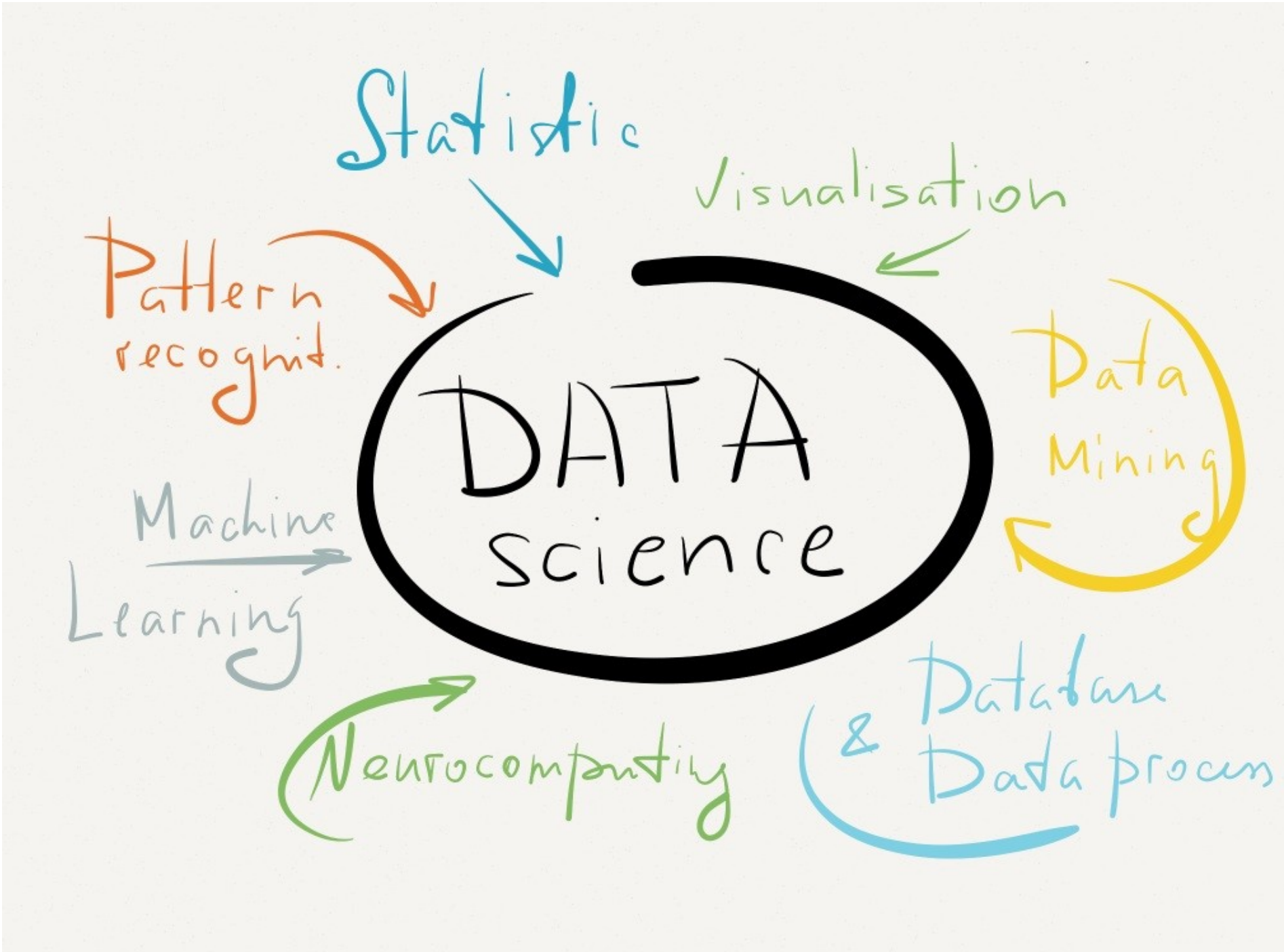
“Big Data” means Three Things

Volume: lots of data

Velocity: coming at you fast—Twitter, 7+TB/day

Variety: text, pictures, video, etc.

www.internetlivestats.com


Statistic
Visualisation
Pattern recognit.
DATA science
Data Mining
Machine Learning
Neurocomputing
Database & Data procss