
Legal, Ethical and Policy Issues in Data Science

COSC2669

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Summary

- Machine Learning and Data Science have a lot of potential to help solve important policy and social issues
- Existing techniques are a good start but need a lot of new work with a focus on:
 - Not just predictions but also on behavior change
 - Developing Methods to deal with ML Systems instead of just models
 - Making Predictions Interpretable (Human/ML in the loop)
 - Dealing with Bias for Fairness and Equity
- Collaborations with governments, non profits and corporations create a testbed to develop new research and methods that is focused on positive social impact

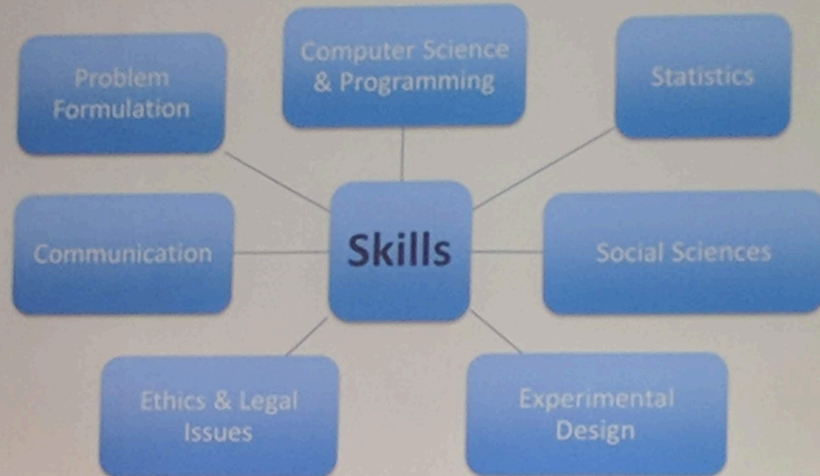
Rayid Ghani | @rayidghani

Center for Data Science & Public Policy



Keynote at SIGIR 2018:
Rayid Ghani, Director of the
Center for Data Science and
Public Policy, University of
Chicago

What do we need to train people to do?



The 6 Dimensions of the Data Scientist

1. Data Engineering: data preparation, model operationalisation & software engineering (week 6)

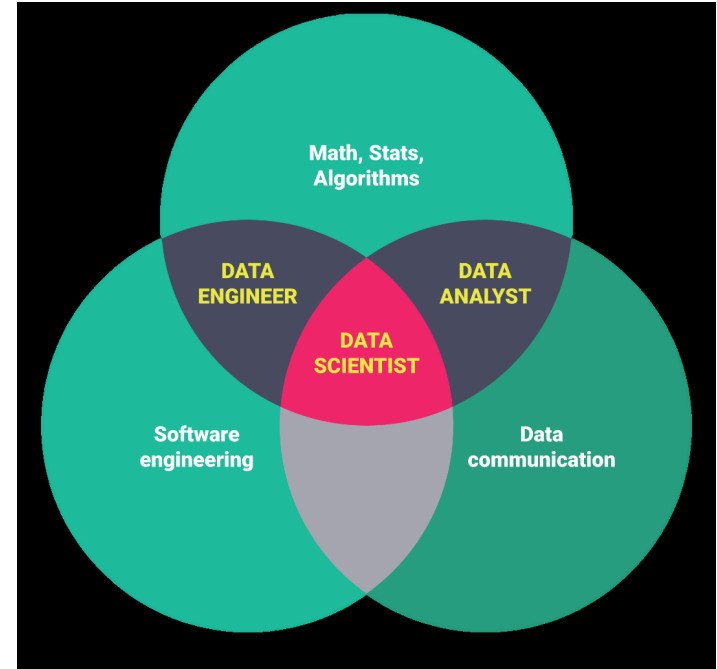
- Data processing pipelines & feature stores
- Operationalise & model stores/ prediction-as-a-service
- Software engineering: OO programming, git, automated testing, automate decision points
- Data warehousing & ETL

2. Data Science: prediction, insights & research

- Prediction vs Insights (week 3)
- Research: making it better & easier for us all
- Cutting edge applications: do our work, make our work/life easier, make things better for us

3. Full Stack Developer: your channels to your customers/users

- Build your channels
- Measure your channels
- Improve your channels



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4. Business Skills (week 4)

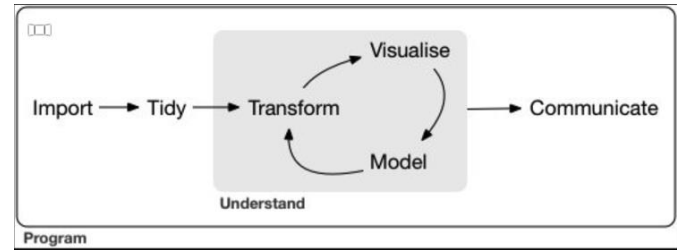
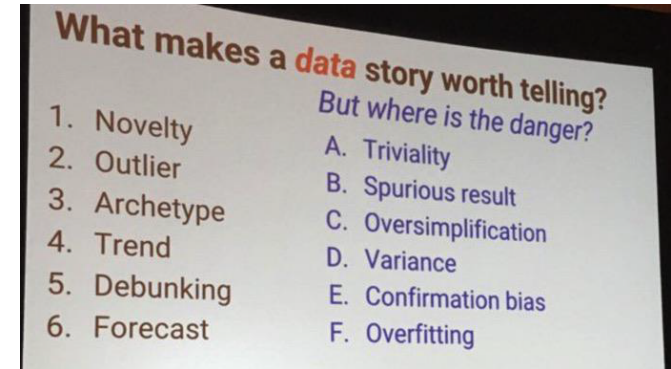
- Growth areas: new opportunities
- Focus areas: biggest margin/profit
- Issues areas: improvements/solutions

5. Consulting Skills: people skills, relationship building and stakeholder management (week 8 and 9)

- Never eat alone: make time to reach out and get to know people
- Be a doctor: see beyond people's asks to identify their actual needs
- Being valuable will open you many doors (even more if you're nice)
- Build powerful & compelling stories based on your findings

6. Domain Knowledge

- You need it
- Acquiring one means you can acquire many
- Find the toughest business analyst and build things to their standard



Task 1

Part 1

This part requires you to **find two job advertisements** that cover the type data science role you see yourself doing. For each job advertisement:

- identify what are your current strengths and
- what are the gaps in your current knowledge and skills.

Part 2

The second part of this task requires you to **create a LinkedIn profile** for yourself (if you do not already have one) and **then update your profile to include the skills you identified in Part 1** (of your current strengths) that you already have for specific data science jobs. If you have other skills and experience add these to your profile as well.

Submission

You need to create a single **PDF file containing:**

- (i) copies of the job descriptions,
- (ii) your assessment strengths and gaps,
- (iii) the link (URL) to your LinkedIn profile.

Datathon

<http://www.datasciencemelbourne.com/datathon/>