The 4th Industrial Revolution

Lesson 1

The 4th industrial revolution

AI

Big Data and IoT

Cloud Computing

Source: www.britannica.com
Data Scientist: The Sexiest Job of the 21st Century

• Based on Harvard Business Review in Oct 2012

• 65% of enterprises feel they have a strategic shortage of data scientists, a role many did not even know existed 12 months ago...

Where Can We Get New Data Scientists?

<table>
<thead>
<tr>
<th>Sources of Talents</th>
<th>Percentage</th>
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</thead>
<tbody>
<tr>
<td>Students Studying Computer Science</td>
<td>34%</td>
</tr>
<tr>
<td>Professionals in disciplines other than computer science</td>
<td>27%</td>
</tr>
<tr>
<td>Students studying in fields other than computer science</td>
<td>24%</td>
</tr>
<tr>
<td>Today’s business intelligence professionals</td>
<td>12%</td>
</tr>
<tr>
<td>Others</td>
<td>2%</td>
</tr>
</tbody>
</table>
**Data Scientists Are More Likely to Have Higher Degrees than Business Intelligence**

- **High School**: Business Intelligence 10%, Data Scientist 5%
- **Technical School**: Business Intelligence 20%, Data Scientist 15%
- **Some College**: Business Intelligence 30%, Data Scientist 25%
- **College Graduate**: Business Intelligence 40%, Data Scientist 35%
- **Masters/Professional Degree**: Business Intelligence 5%, Data Scientist 0%
- **Doctoral Degree**: Business Intelligence 0%, Data Scientist 0%

**Distribution of Educational Fields of Business Intelligence and Data Scientists**

- **Computer Science**: Business Intelligence 20%, Data Scientist 15%
- **Engineering**: Business Intelligence 10%, Data Scientist 5%
- **Natural Science**: Business Intelligence 15%, Data Scientist 10%
- **Business**: Business Intelligence 35%, Data Scientist 30%
- **Mathematics**: Business Intelligence 25%, Data Scientist 20%
- **Humanities**: Business Intelligence 10%, Data Scientist 5%
- **Management Information Systems**: Business Intelligence 5%, Data Scientist 0%
- **Statistics**: Business Intelligence 10%, Data Scientist 5%
- **Social Sciences**: Business Intelligence 10%, Data Scientist 5%
- **Other**: Business Intelligence 5%, Data Scientist 0%
Will Deep Learning/AI Make Data Scientists Lose Their Jobs?

• The most time consuming and most interesting part of data science is feature engineering/selection
• Deep Learning: looks like it does not need feature engineering/selection, just pass the raw data in, and get a model out.

Data Scientists Collaborate with A Big Variety of Personnel

- Data Scientists
- Management
- IT Admin
- Programmers
- Statistician
- Graphic Design
Summary

> 4th industrial revolution
> Where to get new data scientists
> Data scientists know wider, and have higher education than business intelligence
> Data scientists are still highly valuable in the age of artificial intelligence (deep learning)