

Data Science:

**Getting Value out of
Big Data**

After this video you will be able to..

- Describe what modern data science is and its connections to big data
- Explain why data science is the key to getting value out of big data
- List the right set of skills for a data scientist to fit your organization



Insight → Data Product

**Big Data + Analysis
Question → Insight**

Insight → Data Product

Big Data + Analysis Question → Insight



Book Recommendations

Customer
Demographic

Previous
Purchases

Book reviews



What kind of
books does this
customer like?



Book
recommendations



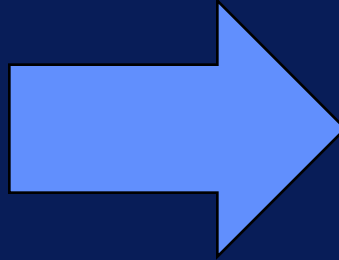
amazon.com[®]

Find Potential Audience for a Book

Model of
customer's book
preferences



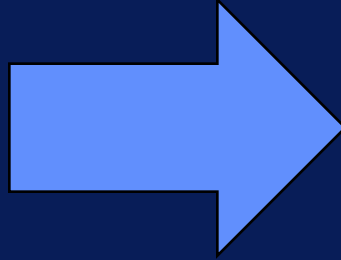
New book
information



Who is likely to
like this book?

Market a New Book

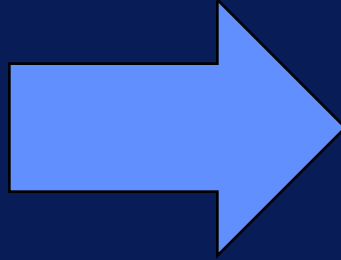
**Who is likely to
like this book?**



**Action to market
the book to the
right audience**

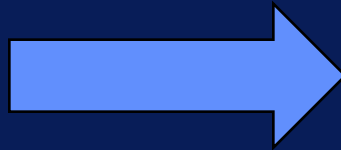
Market a New Book

Who is likely to
like this book?



Action to market
the book to the
right audience

Insight



Action

Actionable Information

Historical data

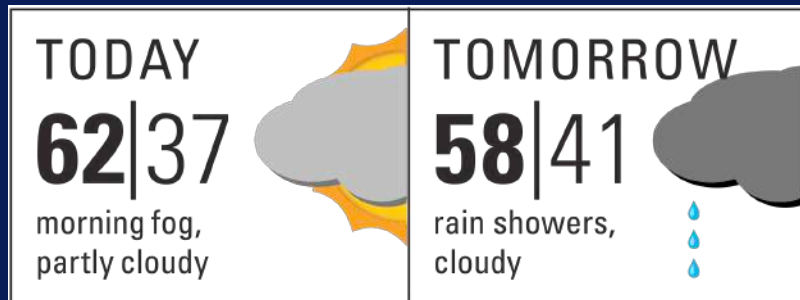


Near real-time data



Prediction

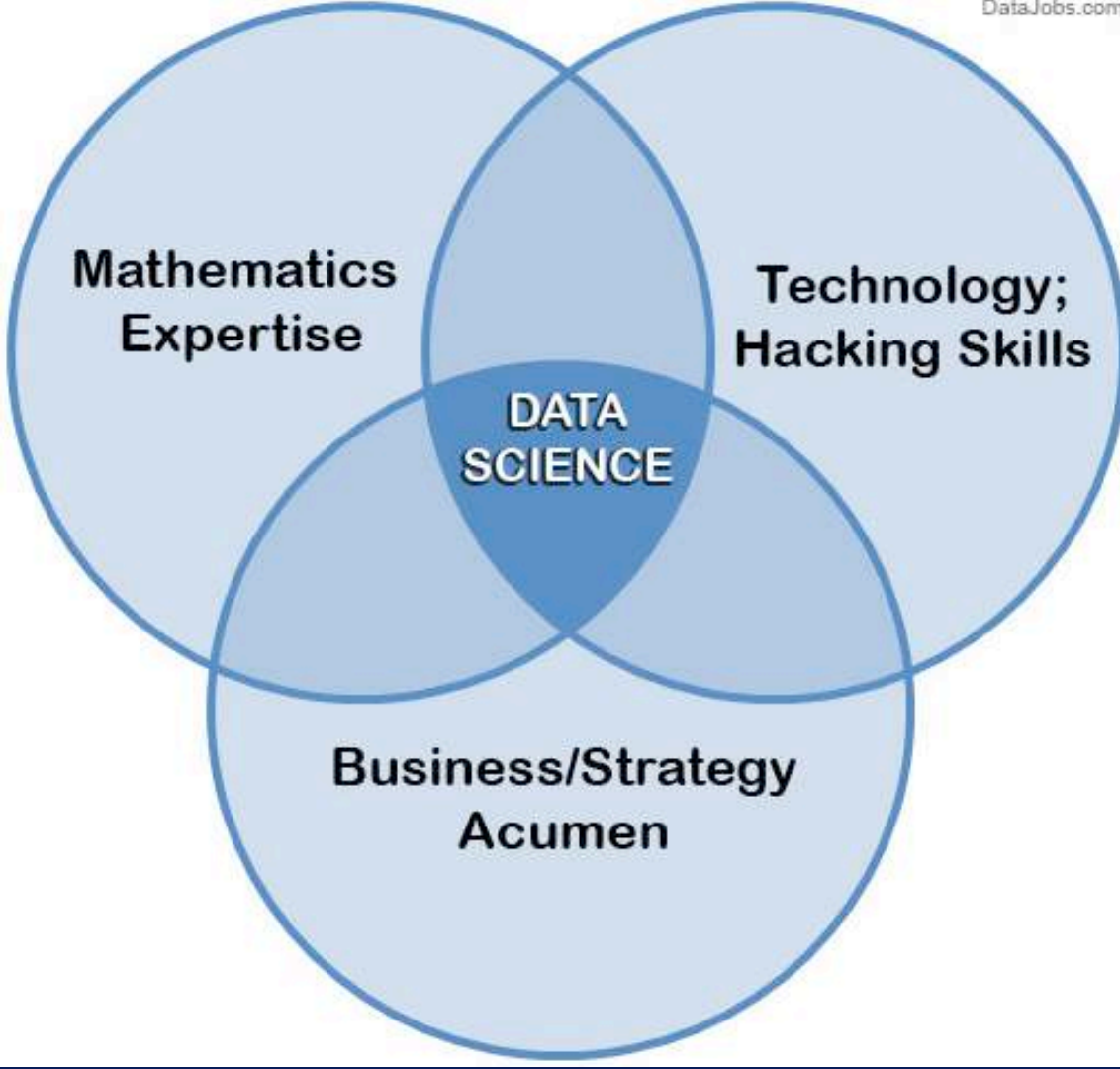
Prediction

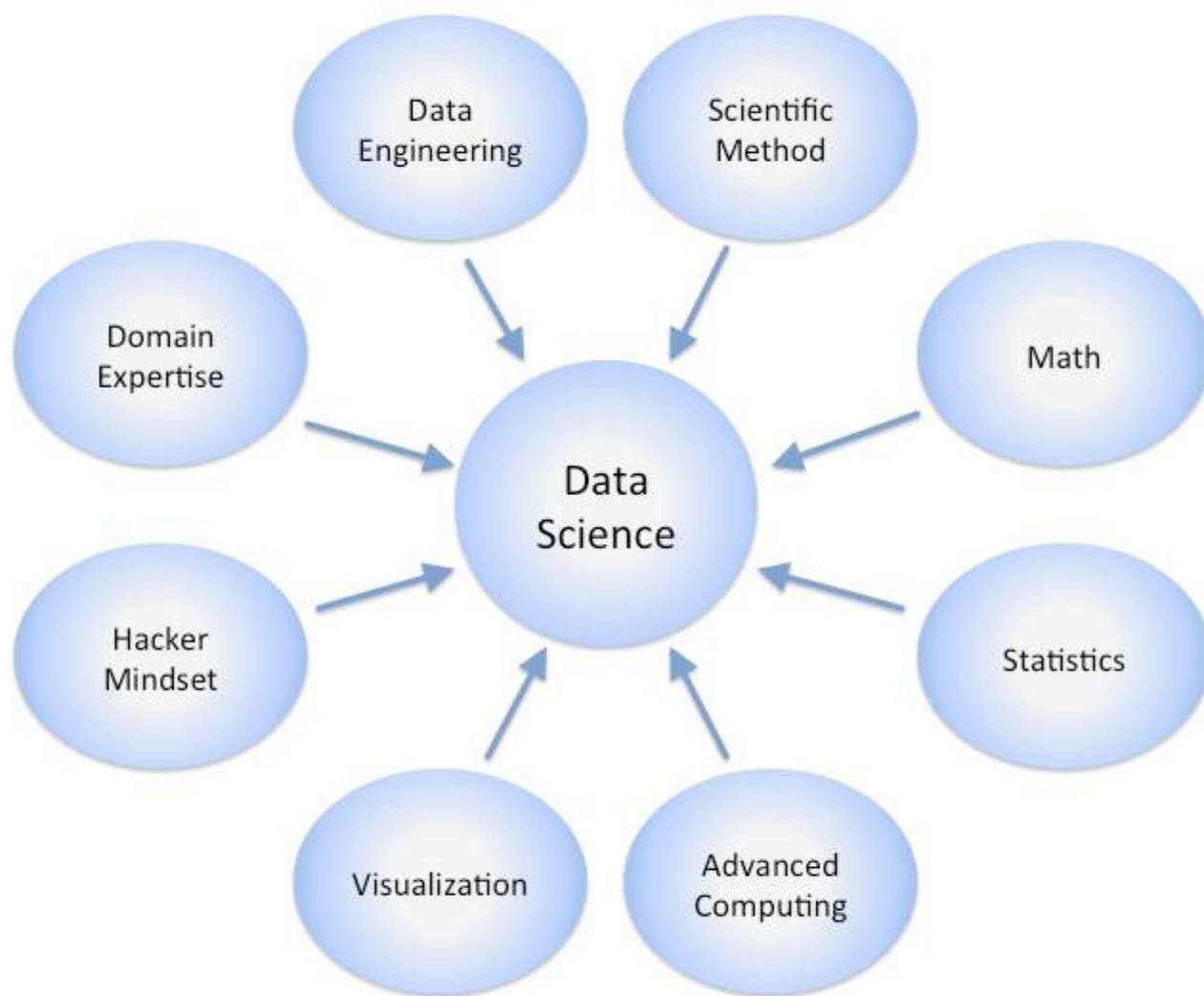


Action



Data Science is Team Work!





MODERN DATA S

Data Scientist, the sexiest job of 21st century requires a mixture of intersection of mathematics, statistics, computer science, communication and business. Finding a data scientist is hard. Finding people who understand who a data scientist is, is equally hard. So here is a little cheat sheet on who the modern data scientist really is.

MATH & STATISTICS

- ★ Machine learning
- ★ Statistical modeling
- ★ Experiment design
- ★ Bayesian inference
- ★ Supervised learning: decision trees, random forests, logistic regression
- ★ Unsupervised learning: clustering, dimensionality reduction
- ★ Optimization: gradient descent and variants



DOMAIN KNOWLEDGE & SOFT SKILLS

- ★ Passionate about the business
- ★ Curious about data
- ★ Influence without authority
- ★ Hacker mindset
- ★ Problem solver
- ★ Strategic, proactive, creative, innovative and collaborative

MODERN DATA SCIENTIST

Data Scientist, the sexiest job of the 21st century, requires a mixture of multidisciplinary skills ranging from an intersection of mathematics, statistics, computer science, communication and business. Finding a data scientist is hard. Finding people who understand who a data scientist is, is equally hard. So here is a little cheat sheet on who the modern data scientist really is.

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PROGRAMMING & DATABASE

- ★ Computer science fundamentals
- ★ Scripting language e.g. Python
- ★ Statistical computing packages, e.g., R
- ★ Databases: SQL and NoSQL
- ★ Relational algebra
- ★ Parallel databases and parallel query processing
- ★ MapReduce concepts
- ★ Hadoop and Hive/Pig
- ★ Custom reducers
- ★ Experience with xaaS like AWS

COMMUNICATION & VISUALIZATION

- ★ Able to engage with senior management
- ★ Story telling skills
- ★ Translate data-driven insights into decisions and actions
- ★ Visual art design
- ★ R packages like ggplot or lattice
- ★ Knowledge of any of visualization tools e.g. Flare, D3.js, Tableau



**Are data scientists
unicorns?**

"ALL FOR ONE -
ONE FOR ALL"



**DOUGLAS
FAIRBANKS**

presents

"THE THREE MUSKETEERS"

*Adaption, Costuming
Research under*
EDWARD KNOBLOCK

Direction under
FRED NIBLO

Photography under
ARTHUR EDESON



Have passion for data

"ALL FOR ONE -
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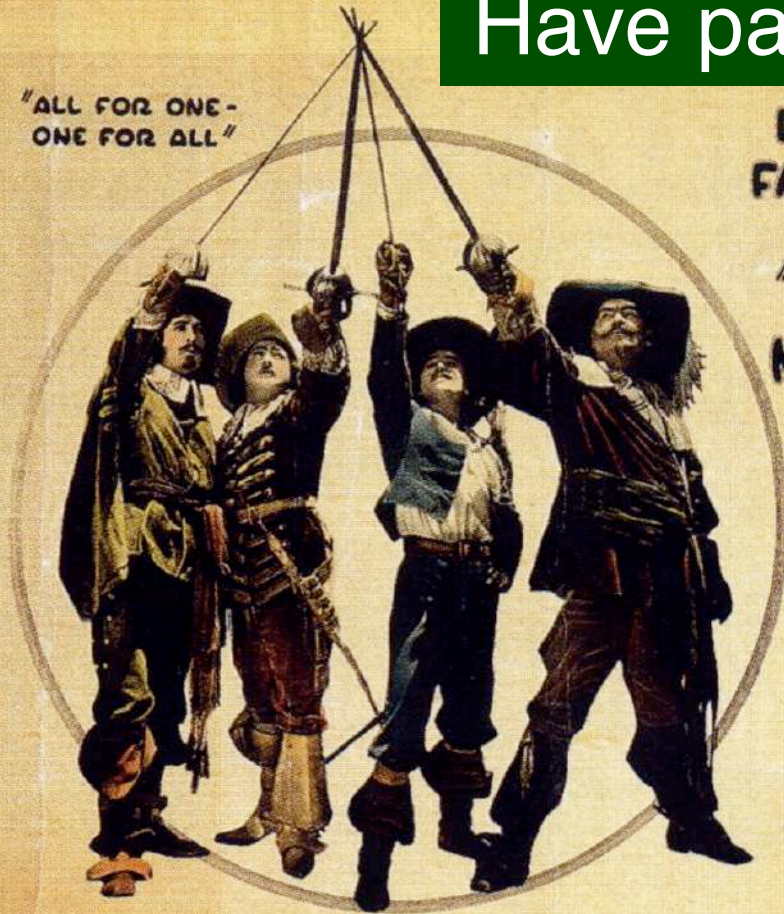
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Have passion for data

Relate problems to analytics

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Have passion for data

Relate problems to analytics

Care about engineering solutions



Have passion for data

Relate problems to analytics

Care about engineering solutions

Exhibit curiosity

"ALL FOR ONE -
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"ALL FOR ONE -
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Have passion for data

Relate problems to analytics

Care about engineering solutions

Exhibit curiosity

Communicate with teammates

Photography under
ARTHUR EDESON

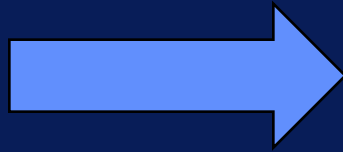




Data Science

**The sum is bigger than
the parts!**

Big Data



Actionable Insight

**Data
Scientist**

Technical Skills

Business Skills

Soft Skills