

Evolving into Data Science, what has changed?

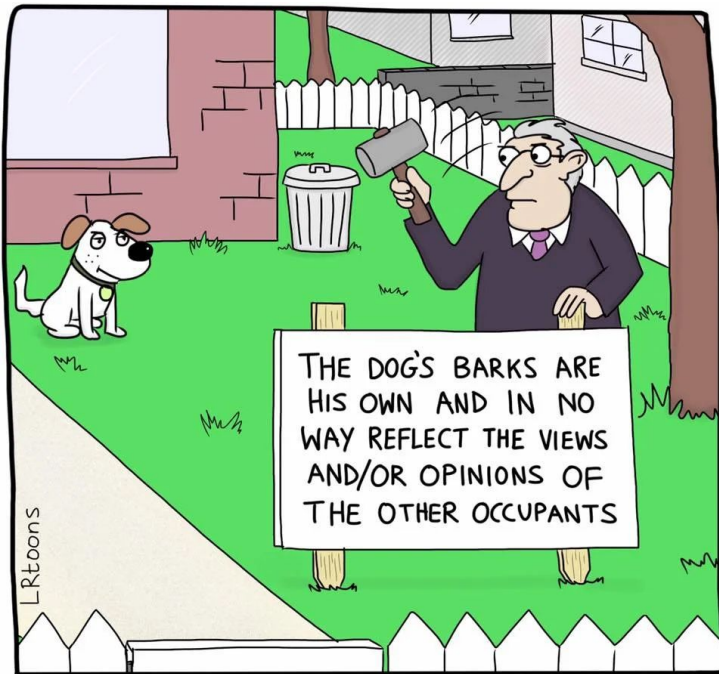
Exploring skills that are unique, valuable and impactful as Data Scientists

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PHUSE EU Connect 2022

DISCLAIMER

These are my personal perspectives and not necessarily those of Roche



Source: [Link](#)

- YOU are in Demand - the rise and rise of Data Science
- What is a data scientist - should we get hung up on the definition or title?

Focus on Skills that are unique, valuable and impactful as a Data Scientist in healthcare:

- **The importance of Curiosity and Systems awareness** - Understanding the bigger picture
- **Seeking to be involved in decision making** - driving the strategy
- **Shaping the environment** - changing how we work
- **Knowledge Management and Knowledge Sharing** - having the right information at the right time

YOU are in Demand!!

Job search in LinkedIn:

Data Science

UK = 40,310

UK Research = 1520

UK Pharmaceutical = 502

“legacy roles”

UK Statistical Programmer = 4166

UK Statistician = 3058



Introduction to the role of data scientist

Data science is a broad and fast-moving field spanning maths, statistics, software engineering and communications. Data scientists will often work as part of a multidisciplinary team, using data and analytics to inform and achieve organisational goals.

[Link](#)



benchmark: teaching

UK Teacher = 36,284

UK Higher Education = 663

UK Primary and Secondary = 353

Harvard
Business
Review

[Diversity](#) [Latest](#) [Magazine](#) [Ascend](#) [Topics](#) [Podcasts](#) [Video](#) [Store](#) [The Big Idea](#) [Data](#)

Business Management

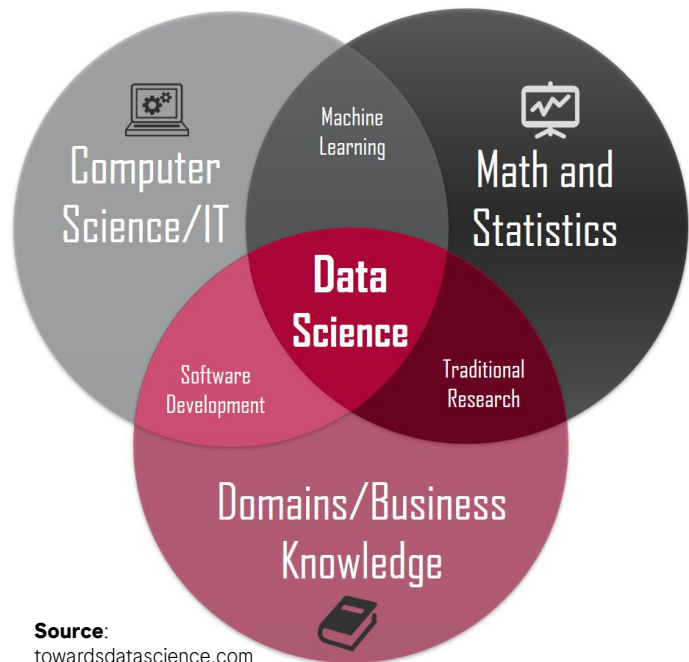
Why Data Science Teams Need Generalists, Not Specialists

by Eric Colson

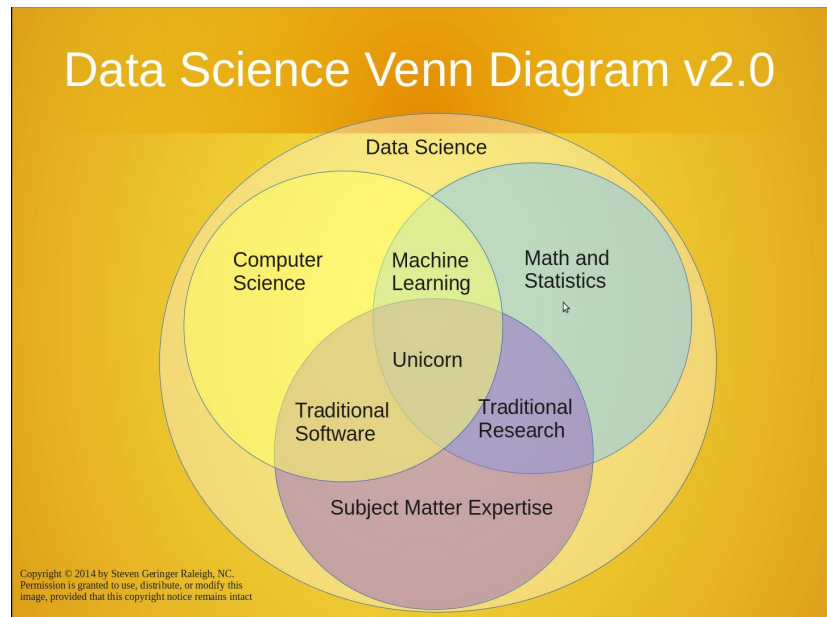
March 08, 2019

[link](#)

What is a data scientist?



OR



Source:
towardsdatascience.com
([link](#))

What is in a title...

Let us assume the title of Data Scientist in healthcare analytics is justified!

The Data Science title

DOES NOT:

- Explicitly define our skillsets or values - its a more general job title than, for example, Statistical Programmer

DOES:

- Help us think more broadly about skills and capabilities vs specific work packages
- Help us Data Scientists to understand how our analytics and insights generations skills can evolve as advancing systems and technology (e.g. standardisation and automation) replace some of our legacy work
- Help to attract a broad range of talent from a growing academic pool (more diverse university courses (142 data science course in UK universities: [link](#)))

Focus on Skills that are unique, valuable and impactful as a Data Scientist in healthcare:

The importance of Curiosity and Systems awareness



What is this?



The importance of Curiosity and Systems awareness

Zoom in - that will help!



The importance of Curiosity and Systems awareness



The importance of Curiosity and Systems awareness

- Understanding the bigger business picture is important because...
 - It gives context to the area you are working in
 - It helps you to understand how your work connects with others - what do you need from them and what do they need from you?
 - You have a better perspective to see more opportunities where you can be impactful...or even enjoy working!
- How do we do that?
 - asking questions like “What are we solving for?” and ”What is the evidence for this?”
 - Check and check again - can I confirm that X is the goal and Y is the plan to get there?
 - Dare to suggest a different approach - if you can align on the common problem do you have a suggestion for a better/faster/smarter way to get there?

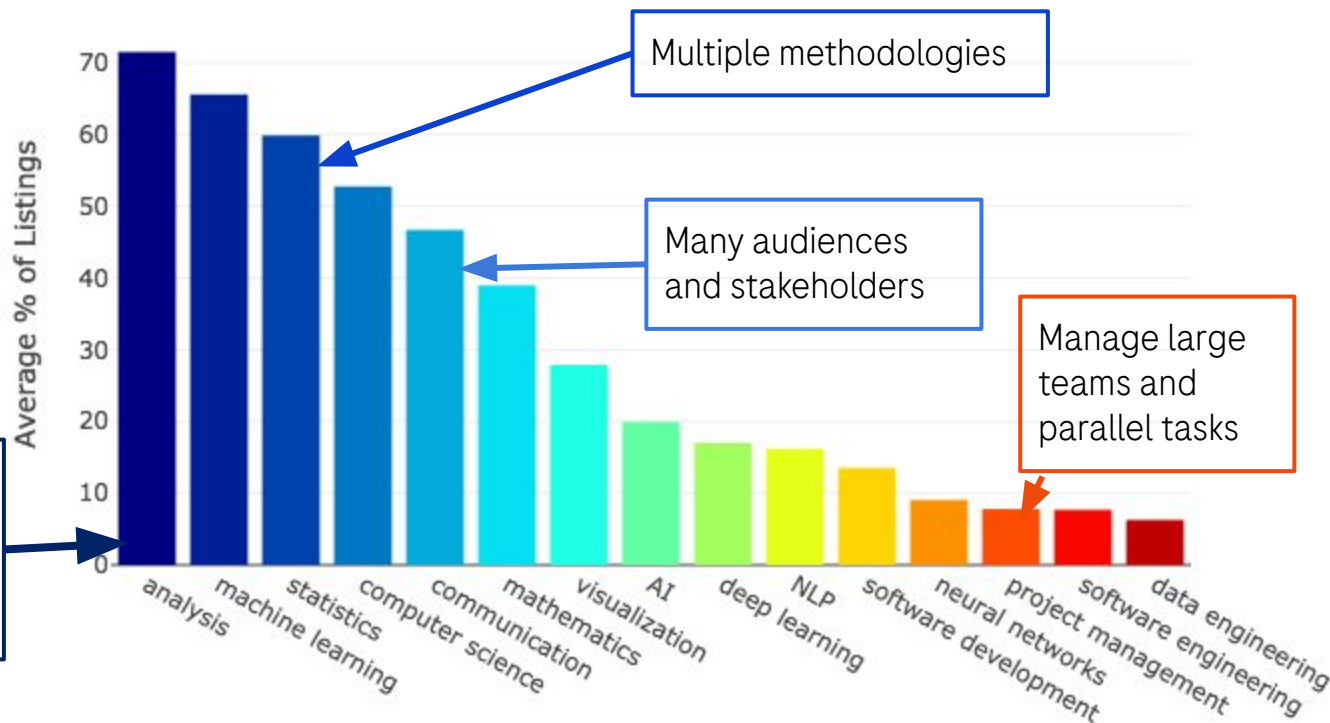
Example: The use of interactive interrogation tools and data visualizations for internal decision making vs fixed SAS outputs.

Seek to be involved in decision making - removing hierarchy and driving the strategy

WHY?

Look at what you do:

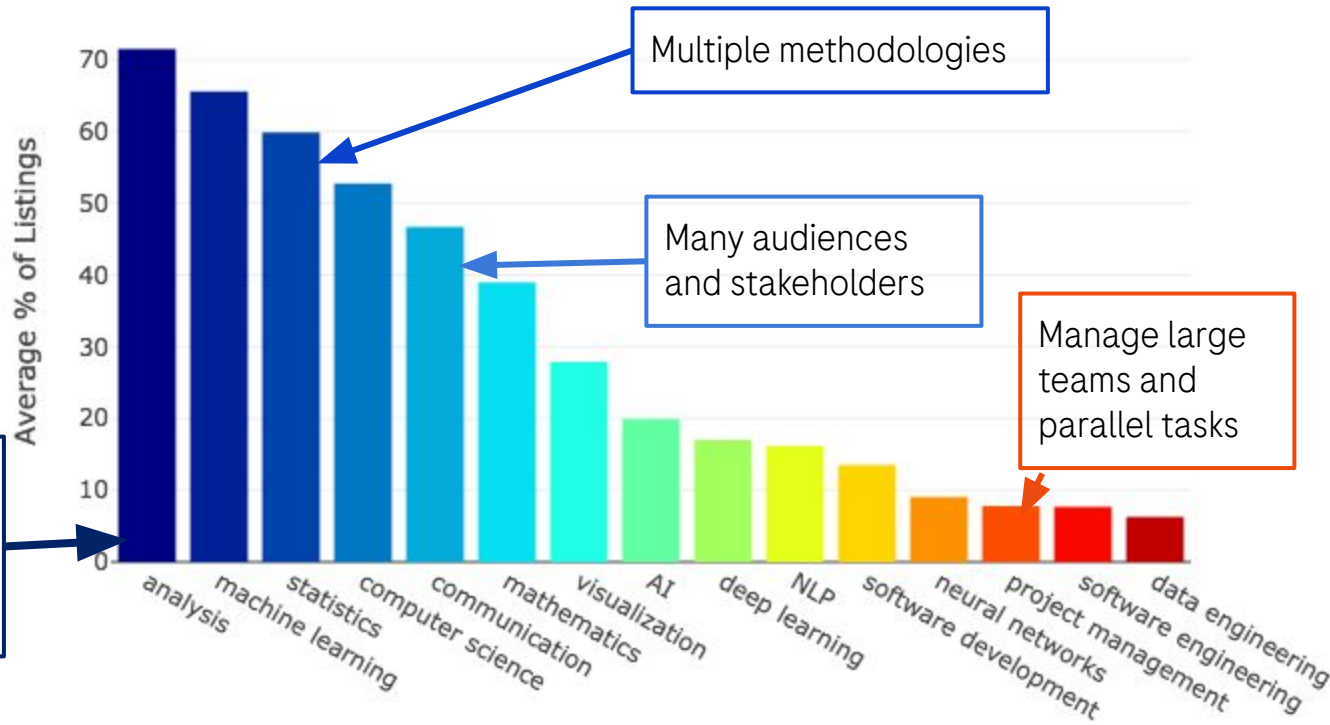
General Skills in Data Scientist Job Listings



Source: [Link](#)

Look at what you do:

General Skills in Data Scientist Job Listings



Source: [Link](#)

Smart, talented people who have hands on knowledge are in the BEST position to know what changes can be impactful

Seek to be involved in decision making - removing hierarchy and driving the strategy

- Do you NEED permission to try something new - or can you just go for it?
 - Ask for forgiveness instead of asking for permission?
- If you need buy-in from others
 - Who is the decision maker?
 - what's stopping you taking it directly to the decision maker vs through a management chain?
- Don't assume "senior" leaders have all the answers (they often don't!)
 - Build your network and connections based on the strengths you see (e.g. network, expertise, ability to challenge)
 - can you leverage their expertise and influence along with your good idea?
- If you see a challenge, speak up and be clear on the impact this is having, with evidence
 - Do you have an alternative solution?

Example: Trial Diversity R-Shiny App now being used in global clinical trial dashboard as part of the commitment to advance inclusivity in our clinical trials (**Guiyuan Lei** - PSI Webinar Series: Showcasing R use in Pharma, November 8th)

Shape your environment in any way you can - whats does yours look like?

Roche



Shape your environment in any way you can

- Do you have Psychological Safety to make proposals, try-fail-learn-try again?
 - How can you build or influence that?
- How do you work?
 - Agile - focus on principles vs process
 - Outcomes based planning - focus on impact vs output
- Owning your development
 - Follow your passion and be honest with yourself about what really drives you
 - This might change over time - that's ok - what next
 - Do you have feedback about how you are rewarded and recognised that your organisation needs to hear? Can you have that conversation?

Examples:

- [Building a psychologically safe workplace | Amy Edmondson | TEDxHGSE](#)
- [What is Agile Methodology? - Mark Shead](#)
- [Harvard Business Review: Its-not-just-semantic-managing-outcomes](#)

- Having the right information at the right time and **taking responsibility to contribute to this.**
 - Create it
 - Share it
 - Store it...somewhere it can be found!



Doing now what patients need next