CAREERS IN DATA SCIENCE FOR ACADEMICS

INSIGHT DATA SCIENCE

October 8, 2020
MY PATH INTO DATA SCIENCE: EMILY KEARNEY
WHAT IS DATA SCIENCE?

Subject
Matter
Expertise

Data
Science

Computer
Science

Math & Stats
Different images cover a breadth of themes in the show to go beyond what any single image portrays.

Personalized artwork depending on users interest in different actors.
Indigo within 1% of final yield 4 months early

USDA Final Jan Report: 176.4 bu/ac

Indigo Oct prediction of Final: 177.0 bu/ac

USDA In-Season estimates

Market consensus

166.2 Aug

168.2 Sep

170.1 Oct

172.4 Nov

https://www.indigoag.com/blog/indigo-atlas/living-map-of-the-worlds-food-system
IS DATA SCIENCE RIGHT FOR YOU?

HOW DO YOU GET IT IN?
Who are Academic Scientists?

Job of an academic scientist:

• Plan and execute a study ~ years
• Collect and clean data
• Use programming and statistics/ML to discriminate between signal and noise
• Convey results to the scientific community
Who are Data Scientists?

Job of a data scientist in industry:

- Plan and execute a study ~ week-long sprints
- Collect and clean data
- Use programming and statistics/ML to discriminate between signal and noise
- Convey results to the team/company/investors
- Make data-informed decisions that directly impact a product and a business
The Modern Data Scientist

Math and Statistics
- Machine learning
- Statistical modeling
- Experimental design
- Bayesian inference
- Supervised learning
- Unsupervised learning
- Optimization

Programming and Database
- Computer science fundamentals
- Scripting language e.g., Python
- Statistical computing packages, e.g., R
- Databases; SQL
- Parallel databases and parallel query processing
- MapReduce concepts
- Hadoop, Hive, Spark
- Experience with AWS

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

Communication and Visualization
- Able to engage with senior management
- Storytelling skills
- Translate data driven insights into decisions and actions
- Visual art design
- Knowledge of visualization tools
EXAMPLE ROLES IN DATA SCIENCE

- Decision Science
  - Analytics
  - Experimentation
  - Visualization

- Data Product
  - Data is core to the product, model output provides direct value to user
  - Role focused on deploying model

LinkedIn’s People You May Know recommender
IT CAN BE HARD TO KNOW HOW TO EVEN GET STARTED

ENTRY LEVEL JOB OPENING:
Hiring recent college grads

REQUIREMENTS:
5 years of experience, 6 Olympic gold medals, and superpowers.

12:05 PM - 6 Jul 2015

11,198 Retweets 7,586 Likes
The Gap

- Tools
- Evidence
- Team
- Pace

Smart individuals with the right skills

High impact teams
The Gap

Tools

Evidence

Team

Pace
The Gap

- Tools
  - Learn industry-standard tools, not just research tools
    - Python, not MATLAB or R

- Evidence
- Team
- Pace
The Gap

Tools

Evidence

Team

Pace

Hiring teams want to see that you **have** learned something, not just that you **can**.

- Build small projects with industry standard tools with a strong use case.
Work as collaboratively as possible, emphasize work done on teams, code written in teams.

- Emphasize work done on teams, code written on teams.
- Ask questions, ask for help.
The Gap

Agile development — can you get something done on a fast timescale?
Smart individuals with the right skills

The Gap

High impact teams
Smart individuals with the right skills

High impact teams

7 Weeks
Full-time
Pay only if you get the job
INSIGHT IN A NUTSHELL

- Intro & Ideation
- Data Project
- Company Demos
- Job Interviews

Week 1
Weeks 2 - 4
Weeks 5 - 7
The Benefits

Project-based Learning

WHY
● Show teams your full potential

WHAT
● Learn skills in a cutting-edge area
● Build your portfolio with highly-demanded technologies

HOW
● Actively learn by building
● Gain hands on experience with guidance from industry experts
Company Visits & Demos

WHY
● Meet the team members you'd work with
● Present to the teams that fit you

WHAT
● Over 38% of demos lead to an interview
● 3x higher for Fellows than traditional applications *

HOW
● Get your foot in the door with the hiring manager
● Guidance on presenting to hiring managers, and prep for each company

* Source: Jobvite 2019 Recruiting Funnel Benchmark Report
Interview Preparation & Coaching

**WHY**
- Interviews naturally have noise
- Interviews require deliberate and customized practice

**WHAT**
- Insight Fellows get jobs 40% faster with personalized support, with up to 24% higher salaries than comparable professionals

**HOW**
- Personalized preparation for your interviews
- One-on-one mock interviews for each company to help you show the relevant skills
- Negotiation support for offers
Fellows create a lifelong network

- Past Fellows mentor new Fellows, just as the previous Fellows did for them
- The Fellow community accelerates learning through participation on our exclusive knowledge platform
- Deferred membership dues enable the program for future Fellows

3500+ DATA SCIENTISTS & ENGINEERS
To apply, visit: apply.insightfellows.com

Early application deadline: October 12

Main application deadline: November 2

Next session begins: Tuesday, January 19, 2021
Cameron Jones - Ecology and animal behavior

linkedin.com/in/camantis/

Apple

Cornell University

University of California, Davis
have a case where the classically valid argument \( s_1, \ldots, s_n \rightarrow t \) fails to preserve truth.

More generally, we get logical exceptions precisely in the cases of loops that make claims that are entailed by the untruth (and instability) of the sentence in question.

2.1 Which Logic is Correct?

What follows for the question of which logic is correct? For simplicity, let us again focus on the case of propositional logic. The upshot of the above proposition is that if we insist that logically valid rules and principles hold strictly—i.e. without exception—then there are almost none of these. More precisely, the only logically valid arguments will be those that are (in one or two ways) vacuously true preserving.

On the other hand, there remains a natural sense in which classical logic is correct, despite the exceptions. For all of these invalid sentences, such as \( \phi \), whose

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1 Ultimately, loops must be understood as sets rather than single sentences, e.g. \( \{ p, \neg p \} \) where \( a = \{ b \} \) and \( b = \{ -b \} \), are definite sets of the appendix. For the time being, continue to talk about single sentences as loops—e.g. of talking is compatible with the most general case, i.e. for any set that talk a sentence \( \psi \) is a loop would simply be shorthand for the claim that \( \psi \) is.

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Figure 1

Figure 4
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Questions?

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