Demystifying careers in Health Data Science

HDR UK PhD programme leadership course project proposal

01/03/2022

What is the problem/challenge?

Through research we found that:

1. There is a lack of a UK event that brings **various companies** with graduate and post-graduate roles in **health data science** together

2. **HDR UK** currently has **no career focused events** and as as the national institute for health data science we believe it would be beneficial in advancing its aims

We believe that an event that addresses these gaps would enable students to **leverage the breadth of training at HDR UK** more effectively, companies to discover potential **future employees**, strengthen the bond between academic and **industrial collaborations** and provide an **incentive to joining** (and interacting with) the new HDR UK **alumni network**

[What is your idea?]

What is the solution you are proposing to address the problem / challenge?

1. What is the outcome you are looking for?

2. How will this outcome address the need?

What is our idea?

We are proposing to help launch the **alumni network** with an **annual health data science career fair** involving HDR UK students from all educational routes.

Companies, both partnered with HDR UK as well as guest businesses, will have the opportunity to present their work in a format that both introduces the business as well as provides an insight into the day-to-day life of working with the company as a healthcare data scientist.

We believe the following **needs** will be addressed:

- For students to gain an honest understanding of existing companies with roles in health data science.

- For companies to discover potential future employees and increase their exposure.

- For students to leverage the large breadth of training and educational opportunities presented by HDR UK.

- To strengthen the bond between academic and industrial collaborations.

[What is the detailed design?]

What will you specifically do?

1. What are the outputs?

2. Why will these outputs help to achieve the outcome?

3. How will you measure "success"?

What is our detailed idea?

- We will focus on attracting attendees from **HDR UK education routes** (internships, apprenticeships, linked health data science undergraduates courses, PhD programme & masters courses)
- Potentially could be **expanded** to other students at partner universities and beyond in future years based on the success of the event

- Inviting industry partners and employees that are collaborating with HDR UK or members of HDR UK's The Alliance through appropriate **liaison channels**
- Reaching out to more employers can be done through social media channels, and **connections** of those in the HDR UK network

We will leverage the current HDR UK social media accounts for **promotion of event** and HDR UK organisational expertise

Outcomes

1. We expect the students attending the event to have a **clearer understanding of their desired career path** (related to their progress in education i.e. undergraduate, postgraduate, apprenticeship)
2. We expect **HDR UK to forge a closer interaction with affiliated partners,** as well as see benefits in terms of alumni interaction and growth

….We will aim to evaluate these using a **post-event survey**
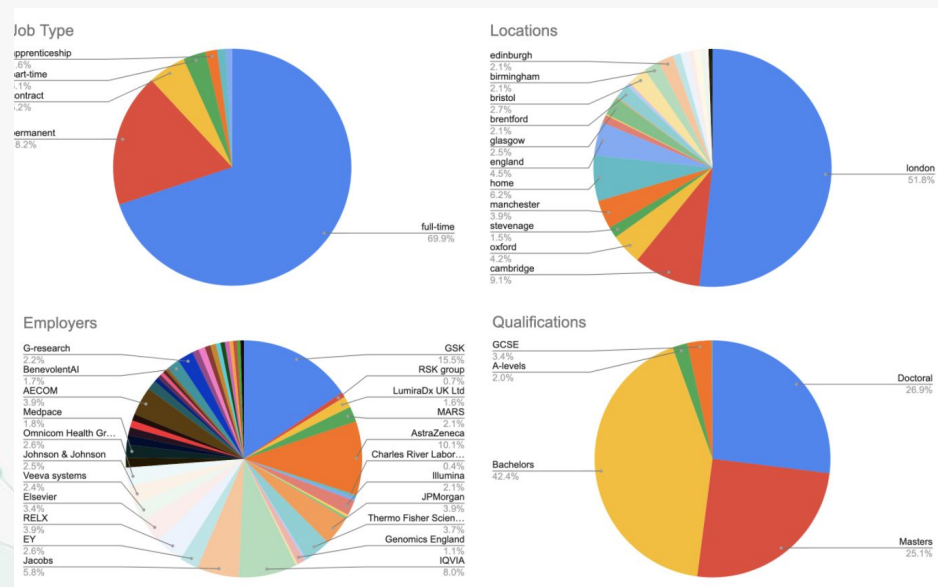
What is our detailed idea?

We have analysed **job postings**, **Linkedin profiles** and **academic literature** to gain an understanding of Health Data Science career pathways

Example 1: Academic route (PhD + Postdoc + Research Associate, diverting to industry.

Job title	Education	Previous career	Listed Skills
Senior Data Scientist in Bioinformatics at a pharmaceutical company	- Master's degree in Chemistry - PhD in Bioinformatics and Molecular Biology	- Postdoctoral Fellow at a bioinformatics institute (1 year) - Research Associate at a cancer research institute (4 years)	- Healthcare related: Bioinformatics, Genomics, Computational Biology, Molecular Biology, Biochemistry, etc - Programming/Data Science related: R, Python, Unix, Data Management, etc

Example 2: Industrial route, with applied HDS jobs. A PhD is not necessarily required.

Job title	Education	Previous career	Listed Skills
Data Scientist at a pharmaceutical company	- Bachelor's degree in Chemistry - Master's (research) in Drug Discovery and Development - Master's (taught) in Health Data Science	- Data Science Graduate Scientist at current company (2 years 1 month) - Internship experience: 4-month internship in HDS company	- Healthcare related: pharmaceutical industry, UV/Vis spectroscopy, HPLC, NMR, medicinal, chemistry, etc - Programming/data science related: machine learning, R, Python, SQL, STATA, SAS, MongoDB, PyTorch, etc

Degree Required

Advanced Degree	8	4.0%
Bachelor's and Above	82	41.4%
Master's and Above	76	38.4%
PhD and MD or Equivalent	18	9.1%
Not Listed	14	7.1%
Total	198	100.0%

[Topics to discuss with your mentors]

In addition to specific discussions about your projects, you should use your mentoring sessions to discuss with your mentors:

1. Your reflections on your work so far

   - How have your ideas / thinking changed since October?

2. How would this type of process/thinking be useful in the organisations they represent?

   - What situations do they encounter that requires a needs-evidence based analysis?

   - What training did they have to help them with this?

3. Could there be opportunities to learn more directly about the work that they do?

Discussion Topics

- During planning we found that modifications were crucial to sharpen the objectives of the event - **how do yourselves handle changes in planning during projects?**

- Leadership skills can be developed through appropriate training - **what training have you utilised and what did you find to be most effective?**

- Defining HDS career pathways became a significant portion of our research as it sharpens the outputs of the event - **what HDS career pathways are present within your respective companies?**