Data Academy HLT

Tasks	GLH
Core Learning – Deep Learning	60 – 120 minutes
Portfolio Task – Deep Learning projects	120 – 240 minutes
Flipped Learning – Revision	30 minutes
Enrichment – AI news	60 minutes
Technology – Frameworks	60 minutes
Wellbeing – Volunteering	60 minutes
Soft Skills – Work ethic	60 minutes
Employability – Remote interviews	60 minutes

*Times are a rough guideline

Core Learning

Portfolio Projects

Flipped Learning

Enrichment

Technology

Wellbeing

Soft Skills

Employability

TECH TALENT ACADEMY

Core Learning 1 – Artificial Intelligence

Optional Extension:

What should organisations do to ensure that they are being responsible with AI and the wide use of data in general?

In Data Science we process a lot data through AI. With the GDPR, it is becoming increasingly important to understand the ethics behind the data that is collected, stored, processed and evaluated. Your task is to:
1. Find out what Responsible AI is?
2. Find instances where AI has failed? Or been used maliciously or incorrectly.
3. Implications of when AI fails. There is a specific article in the GDPR Law that covers this, especially with automated decision making. (opt in and out options).

This task is to help you start revising for your BCS exam What is Machine Learning.

Marking Criteria – Machine Learning algorithms

	Pass	Merit	Distinction
• **Task**	• Writes a short summary of what is responsible AI	• Writes a short summary of what is responsible AI, given an example of where AI have failed, and the implications involved	• Completes the optional task of researching What should organisations do to ensure that they are being responsible with AI

Portfolio Tasks –

Portfolio Projects

Get Started in Deep Learning with tf.keras

https://machinelearningmastery.com/tensorflow-tutorial-deep-learning-with-tf-keras/

How to Use PyTorch and Transfer Learning to Diagnose COVID-19 Patients

https://www.freecodecamp.org/news/deep-learning-with-pytorch/

How to classify butterflies with deep learning in Keras

https://www.freecodecamp.org/news/classify-butterfly-images-deep-learning-keras/

Remember to upload to GitHub

GitHub

Flipped Learning

Flipped Learning

Use the following resources to support you ahead of next weeks session on the following concepts:

Revision techniques - https://www.bcu.ac.uk/exams-and-revision/best-ways-to-revise/best-revision-techniques

Enrichment

Use the following resources to explain concepts in more detail:

AI news - https://www.artificialintelligence-news.com/
- https://www.sciencedaily.com/news/computers_math/artificial_intelligence/

Enrichment

Technology

This week, our focus is on **Frameworks**.

A framework in programming is a tool that provides ready-made components or solutions that are customised in order to speed up development. A framework may include a library, but is defined by the principle of inversion of control (IoC). With traditional programming, the custom code calls into the library to access reusable code. With IoC, the framework calls on custom pieces of code when necessary.

A framework can include support programs, compilers, code libraries, toolsets, and APIs to develop software and create systems. Open-source frameworks are always being updated and improved.

Good features of a framework include:
- Functionality – choose a framework that provides the functionality needed for the project at hand
- Consistency – a framework can assist in consistency for large or distributed teams
- Documentation – choose a framework that has well-documented code and that provides implementation training
- Active Community – frameworks are only as strong as the user base of support.

To find out more information about frameworks, use the following links:
https://www.netsolutions.com/insights/what-is-a-framework-in-programming/
Overview of programming frameworks
https://www.youtube.com/watch?v=BfhSoFARn6w
Using a framework in JavaScript
https://www.youtube.com/watch?v=Ka77djMkSwg

Technology

Wellbeing

This week, our focus is on **Volunteering**.

With busy lives, it can be hard to find time to volunteer. However, the benefits of volunteering can be enormous. Volunteering offers vital help to people in need, worthwhile causes, and the community, but the benefits can be even greater for you, the volunteer. The right match can help you to find friends, connect with the community, learn new skills, and even advance your career.

Giving to others can also help protect your mental and physical health. It can reduce stress, combat depression, keep you mentally stimulated, and provide a sense of purpose. While it's true that the more you volunteer, the more benefits you'll experience, volunteering doesn't have to involve a long-term commitment or take a huge amount of time out of your busy day. Giving in even simple ways can help those in need and improve your health and happiness.

Benefits of volunteering can include:
- Connecting you to others
- Good for mind and body
- Can advance your career
- Can bring fun and fulfilment to your life

For more information about volunteering, visit the following links:
https://whatworkswellbeing.org/resources/volunteer-wellbeing-what-works-and-who-benefits
https://www.helpguide.org/articles/healthy-living/volunteering-and-its-surprising-benefits.htm

Wellbeing

Soft Skills

This week, our focus is **Work Ethic.**

Work ethic is an attitude that one has towards their job. If you're ambitious and determined to do your job well, it often means you have a strong work ethic that makes you a valuable employee who's dedicated to self-improvement. Knowing how to show strong work ethic during job search increases your employability and allows you to position yourself as a qualified candidate. In this article, we explain what are work ethic skills, give examples of skills that can increase your employability and list five steps you can take to demonstrate work ethic at work or during recruitment.

Examples of work ethic skills include:
- Reliability
- Professionalism
- Integrity
- Dedication
- Teamwork
- Accountability

For further information about work ethics, visit the following links:
https://uk.indeed.com/career-advice/career-development/work-ethic-skills
https://www.glassdoor.com/blog/guide/work-ethic-skills/
https://esoftskills.com/attitude-and-work-ethic/

Soft Skills

Employability

A virtual interview is an interview that takes place remotely, sometimes over the phone, but often using technology like video conferencing and other online communication platforms. Virtual interviews are often conducted much the same way as face-to-face interviews. That said, virtual communication requires special considerations and adjustments due to the limited ability to read body language and facial expressions.

Top tips for a virtual interview:
-   Test your technology beforehand
-   Wear professional attire
-   Prepare in advance
-   Limit distractions
-   Use professional body language
-   Build rapport
-   Be authentic

For more information on how to prepare for a virtual interview, visit the following links:
https://uk.indeed.com/career-advice/interviewing/virtual-interview
https://www.themuse.com/advice/video-interview-tips
https://careers.microsoft.com/us/en/virtual-interview

Employability