AI ALIGNMENT COHORT RESOURCES

Pre-reads for 7/15 Session:

Linear Algebra

1. Linear transformations - what they are, and why they are important:
   Linear transformations and matrices | Chapter 3, Essence of linear algebra
2. How matrix multiplication works:
   Matrix Multiplication
   Matrix multiplication as composition | Chapter 4, Essence of linear algebra
3. How to Understand Basis (Linear Algebra) | by Mike Beneschan
4. Basic matrix properties: rank, trace, determinant, transpose
   Rank, basis, dimension
   Trace of a matrix
   The determinant | Chapter 6, Essence of linear algebra
5. Bases, and basis transformations:
   Change of basis | Chapter 13, Essence of linear algebra
6. Eigenvalues and eigenvectors:
   Eigenvectors and eigenvalues | Chapter 14, Essence of linear algebra
7. Different types of matrices, and their significance (e.g. symmetric, orthogonal, identity, rotation matrices) medium
   Matrix Types. Square, Triangle, Diagonal, Identity… | by jun94 | jun-devpBlog | Medium

Information Theory

1. Entropy in Machine Learning: Definition, Examples and Uses
2. Entropy; A method for Data Science & Machine Learning | by GOKE ADEKUNLE; #Wolfwords
3. Basics of Entropy

4. Understanding KL Divergence. A guide to the math, intuition, and… | by Aparna Dhinakaran | Towards Data Science
5. The KL Divergence : Data Science Basics
6. Elements of Information Theory (Wiley Series in Telecommunications and Signal Processing) (Hardcover)

Pre-reads for 7/22 Session:

Neural Networks

1. But what is a neural network? | Chapter 1, Deep learning
2. Gradient descent, how neural networks learn | Chapter 2, Deep learning
3. What is backpropagation really doing? | Chapter 3, Deep learning
4. Neural Networks in 10mins. Simply Explained! | by Sadaf Saleem | Medium
5. Introduction to Neural Networks — Part 1 | by Harsha Bommana | Deep Learning Demystified | Medium
6. Introduction to Neural Networks — Part 2 | by Harsha Bommana | Deep Learning Demystified | Medium
7. Loss Functions Explained. Intuitive explanations of various Loss… | by Harsha Bommana | Deep Learning Demystified | Medium
8. Understanding Optimizers. Exploring how the different popular… | by Harsha Bommana | Deep Learning Demystified | Medium

EINOPS

1. Einops in 30 seconds
2. Einops tutorial, part 1: basics
3. Einsum is All you Need - Einstein Summation in Deep Learning
4. Einsum Is All You Need: NumPy, PyTorch and TensorFlow