

## Michael Christopher – S224830467

The first week covered the fundamentals of machine learning (ML), including its definition and practical uses. The main phases of developing an ML system, including data gathering, model training, and evaluation, were given. It also differentiated between supervised, unsupervised, and reinforcement learning. Model evaluation, fundamental mathematical concepts (especially vectors and matrices), and the importance of linear algebra in machine learning processes were the main topics of discussion this week.

Building reliable ML models requires a deeper understanding of statistics and data preprocessing, which were covered in more detail in week two. This week discusses topics about Random variables, distributions, and data wrangling—the act of organizing and cleaning raw data. Feature extraction, text data representation, and the importance of identifying between signal and noise were all highlighted in the content. Techniques for encoding, scaling, and normalization were also discussed.

My reading this week extended beyond the course pages. I explored several reliable resources:


- **Scikit-learn documentation** (<https://scikit-learn.org>) — helped clarify model selection, preprocessing, and scaling.
- **Pandas and NumPy** libraries — I followed official documentation and tutorials for practice in data wrangling and numerical operations.




I feel that these two weeks have given me a strong conceptual and technical foundation for working in ML. The structured breakdown of learning types and the definition of each step in an ML project helped me visualise how data becomes important. I like the emphasis on mathematics, as understanding vectors and matrices isn't just theoretical, but it directly impacts model accuracy and computational performance.

The statistical concepts, such as random variables and distributions, now make more sense to me in the context of data exploration. I also gained a new appreciation for preprocessing steps like scaling and encoding. These are often overlooked but are crucial for model success. Overall, I now better understand not just what to do in ML, but also why each step matters.

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## Quiz Submissions - Week-1 quiz





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| Individual Attempts              | Grade                                                                                             |
|----------------------------------|---------------------------------------------------------------------------------------------------|
| Attempt 1                        |  7 / 10 - 70 %   |
| Attempt 2                        |  10 / 10 - 100 % |
| Overall Grade (highest attempt): |  10 / 10 - 100 % |

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## Quiz Submissions - Week 2 quiz

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| Individual Attempts              | Grade                                                                                               |
|----------------------------------|-----------------------------------------------------------------------------------------------------|
| Attempt 1                        |  6 / 10 - 60 %   |
| Attempt 2                        |  9 / 10 - 90 %   |
| Attempt 3                        |  10 / 10 - 100 % |
| Overall Grade (highest attempt): |  10 / 10 - 100 % |