Basic Mathematics Overview

- **Basic overview of sets :** Intend to give an idea of success, failure, false positives and false negatives.
- **Linear Spaces :** Intro to linear spaces focusing on interpretation of data, especially features and targets as spaces. Linear transformations.
- **Functions :** Basic formalism of functions, single and multivariate with their geometric interpretations. An overview of concept of cost functions and the importance of convexity.
- **Gradient :** Interpretation of gradient. Basics of gradient descent. A couple of applications if time permits. Possibly linear regression. Mention of other algorithms used for minimization.
- **Matrices :** Writing linear equations as matrices. Basic matrix operations, addition, scalar and vector multiplication, inverse.