### **Define Goal: PRODUCTS or ALGORITHMS**

### 1. Maths

- Linear Algebra (Matrix, Vector)
- Statistics
- Probability

## 2. Learn Python & its Libraries

- Numpy
- Pandas

## 3. Learn ML Algorithms

- Supervised vs Unsupervised vs Reinforcement
- Linear Regression, Logistic Regression, Clustering
- KNN (K Nearest Neighbours)
- SVM (Support Vector Machine)
- Decision Trees
- Random Forests
- Overfitting, Underfitting
- Regularization, Gradient Descent, Slope
- Confusion Matrix

## 4. Data Preprocessing (for higher accuracy)

- Handling Null Values
- Standardization
- Handling Categorical Values
- One-Hot Encoding
- Feature Scaling

### 5. Learn ML libraries

- Scikit learn
- Matplotlib
- Tensorflow for DL

# 6. Practice, Practice (Kaggle)

\*Explore projects on Github

#### Resources:

- 1. <a href="http://www.maths.qmul.ac.uk/~pjc/notes/linalg.pdf">http://www.maths.qmul.ac.uk/~pjc/notes/linalg.pdf</a> (Maths)
- 2. <a href="https://www.mathsbox.org.uk/twi/astats.pdf">https://www.mathsbox.org.uk/twi/astats.pdf</a> (Maths)
- 3. <a href="https://www.youtube.com/playlist?list=PLLy\_2iUCG87D1CXFxE-SxCFZUiJzQ3lvE">https://www.youtube.com/playlist?list=PLLy\_2iUCG87D1CXFxE-SxCFZUiJzQ3lvE</a> (Maths)
- 4. <a href="https://developers.google.com/machine-learning/crash-course">https://developers.google.com/machine-learning/crash-course</a> (ML by Google)
- 5. <a href="https://www.datacamp.com/courses/intro-to-python-for-data-science">https://www.datacamp.com/courses/intro-to-python-for-data-science</a> (Python Basics)
- 6. <a href="https://www.coursera.org/learn/machine-learning">https://www.coursera.org/learn/machine-learning</a> (Stanford Course by Andrew ng)
- 7. <a href="https://madewithml.com/">https://madewithml.com/</a>
- 8. <a href="https://www.javatpoint.com/data-preprocessing-machine-learning">https://www.javatpoint.com/data-preprocessing-machine-learning</a> (Data Preprocessing)
- 9. <a href="https://scikit-learn.org/stable/">https://scikit-learn.org/stable/</a> (Scikit Learn)
- 10. <a href="https://www.tensorflow.org/">https://www.tensorflow.org/</a> (Tensorflow)
- 11. <a href="https://www.kaggle.com/">https://www.kaggle.com/</a> (Kaggle)