SESSION PLAN 13

Session Name	Regularization

Learning Outcomes

- Understand the intuition behind gradient descent
- Understand bias-variance trade-off in data
- Use regularization to get an optimized model
- Apply cross-validation and hyperparameter tuning techniques to further improve the results

Prerequisites for the Student ● Regularization	

Student Activities

- Ask learners what they have learned from the concept?
- Medium blog on L1 and L2 regularization
  https://towardsdatascience.com/intuitions-on-l1-and-l2-regularisation-235f2db4c261
- Ask learners How Cross validation help in optimizing the model?
- When and where to choose L1 and L2 regularization?
- What's the relation of bias-variance to overfitting and underfitting?
- Difference between parameters and Hyper-parameters?
- Overview of Regularization
  - Stochastic Gradient Descent
  - Bias-Variance Trade-off
  - Lasso and Ridge regression
  - Cross-validation and Hyperparameter tuning
- Practice problem on Regularization
  - Refer the GitHub repo for problems
- Quiz on Regularization.
- Questions and Discussion on doubts - AMA

Next Session

- Concept - Logistic Regression
- Key topics to be highlighted - highlight where they would need to spend more time and importance w.r.t Data Science.
  - Difference between Linear and Logistic Regression
  - Sigmoid function
  - Cost function with gradient descent
  - Evaluation metrics