Welcome to

DS3010: DS-III: Computational Data Intelligence Final Exam Review Prof. Yanhua Li

Time: 11:00am – 12:50pm M & R
Location: HL 114
D-term 2022
Final exam

- **4/25 M** Final exam: 11-12:50PM in Canvas.
- You can either come to the classroom or do it remotely.

- Prof Li will be remote by Zoom.
- Q&A with Prof Li’s office hour zoom.
- Check the zoom link on Canvas.
  - In the module “class info” -> “Office hours (Prof Li and TA)”
Final exam

• Watch the lecture videos.

• 10 Questions:

• Q1: Class introduction (5 points)
  • Week 1 (3/14 M): *Topic*: Overview of Data Science

• Q2: Machine Learning Introduction (5 points)
  • Week 2 (3/21 M): *Topic*: Data Analytics using data mining and machine learning

• Q3: Gradient Descent (10 points)
  • How learning rate affects the gradient descent?
Final exam

- Q4: Variance and Bias (10 points)
  - What are the errors from variance and bias respectively?
- Q5: Multi-Layer Perceptron (MLP) (10 points)
  - How are the input data points processed layer-by-layer through MLP?
- Q6: Activation function (e.g., ReLU) (5 points)
- Q7: Feature Scaling (15 points)
- Q8: Vanilla Gradient Descent (VGD) and Adagrad (10 points)
  - How the parameters are updated using VGD and Adagrad
Final exam

• Q9: K-means (10 points + 5 bonus points)

• Q10: Hierarchical Agglomerative Clustering (HAC) (20 points)
Questions