

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