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Notre Dame CSE 40647/60647 Fall 2017 - Data Science

- ▶ **Instructor:** Dr. Meng Jiang ([index.html](#))
- ▶ **Time:** 2:00 pm - 3:15 pm, Tuesday Thursday, August 22 to December 7, 2017
- ▶ **Location:** DeBartolo Hall 140
- ▶ **TAs:** ??? ??? [???@nd.edu (???@nd.edu)]
- ▶ **Office hours:** Dr. Meng Jiang ??:?? - ??:?? @ 326C Cushing Hall
- ▶ **TA hours:** TA ??:?? - ??:?? @ ???
- ▶ **Syllabus:** Download ([teaching/Syllabus-CSE-DataScience-Fall17.pdf](#))
- ▶ **Piazza:** ??? (???)
- ▶ **Compass:** ??? (???)

| Week# | Date (T/R) | Lecture# | Topic |
|-------|-----------------|----------|---|
| 1 | 08-22-17 (T) | 1 | Introduction [pdf (teaching/CSEx0647Fall17-01-Introduction.pdf)] |
| 1 | 08-24-17 (R) | 2 | Getting to know your data: Data description [pdf (teaching/CSEx0647Fall17-02-DataDescription.pdf)] |
| 2 | 08-29-17 (T) | 3 | Getting to know your data: Data visualization [pdf (teaching/CSEx0647Fall17-03-DataVisualization.pdf)] |
| 2 | 08-31-17 (R) | 4 | Data preprocessing: Data cleaning and data integration [pdf (teaching/CSEx0647Fall17-04-DataCleaning.pdf)] |
| 3 | 09-05-17 (T) | 5 | Data preprocessing: Data reduction and dimension reduction [pdf (teaching/CSEx0647Fall17-05-DataReduction.pdf)] |
| 3 | 09-07-17 (R) | 6 | Data cube: Concepts and operations [pdf (teaching/CSEx0647Fall17-06-DataCube.pdf)] |
| 4 | 09-12-17 (T) | 7 | Data cube: Cube computation methods [pdf (teaching/CSEx0647Fall17-07-CubeComputation.pdf)] |
| 4 | 09-14-17 (R) | 8 | Data cube: Data warehouse and OLAP [pdf (teaching/CSEx0647Fall17-08-DataWarehouse.pdf)] |
| 5 | 09-19-17 (T) | 9 | Frequent pattern mining: Concepts and Apriori [pdf (teaching/CSEx0647Fall17-09-FrequentPatternApriori.pdf)] |
| 5 | 09-21-17 (R) | 10 | Frequent pattern mining: FP-Growth [pdf (teaching/CSEx0647Fall17-10-FPGrowth.pdf)] |
| 6 | 09-26-17 (T) | 11 | Frequent pattern mining: Pattern evaluation [pdf (teaching/CSEx0647Fall17-11-PatternEvaluation.pdf)] |
| 6 | 09-28-17 (R) | 12 | Advanced frequent pattern mining: Diverse patterns and constraint-based pattern mining [pdf (teaching/CSEx0647Fall17-12-DiversePattern.pdf)] |
| 7 | 10-03-17 (T) | 13 | Advanced frequent pattern mining: Sequential pattern mining and graph pattern mining [pdf (teaching/CSEx0647Fall17-13-SequentialPattern.pdf)] |
| 7 | 10-05-17 (R) | 14 | Classification: Concepts and decision tree induction [pdf (teaching/CSEx0647Fall17-14-DecisionTree.pdf)] |
| 8 | 10-10-17 (T) | 15 | Classification: Bayesian classification [pdf (teaching/CSEx0647Fall17-15-NaiveBayes.pdf)] |

| Week# | Date (T/R) | Lecture# | Topic |
|-------|-----------------|----------|---|
| 8 | 10-12-17 (R) | 16 | Classification: Evaluation and ensemble methods [pdf (teaching/CSEx0647Fall17-16-ClassificationEvaluation.pdf)] |
| 9 | 10-17-17 (T) | - | Fall break |
| 9 | 10-19-17 (T) | - | Fall break |
| 10 | 10-24-17 (T) | - | Mid-term exam? |
| 10 | 10-26-17 (R) | 17 | Advanced classification: Support vector machines [pdf (teaching/CSEx0647Fall17-17-SVM.pdf)] |
| 11 | 10-31-17 (T) | 18 | Advanced Classification: Neural networks [pdf (teaching/CSEx0647Fall17-18-NeuralNetwork.pdf)] |
| 11 | 11-02-17 (R) | 19 | Clustering: Concepts [pdf (teaching/CSEx0647Fall17-19-ClusteringIntro.pdf)] |
| 12 | 11-07-17 (T) | 20 | Clustering: Partitioning methods [pdf (teaching/CSEx0647Fall17-20-KPartitioning.pdf)] |
| 12 | 11-09-17 (R) | 21 | Clustering: Kernel-based clustering [pdf (teaching/CSEx0647Fall17-21-KernelKMeans.pdf)] |
| 13 | 11-14-17 (T) | 22 | Clustering: Density-based clustering [pdf (teaching/CSEx0647Fall17-22-DBSCAN.pdf)] |
| 13 | 11-16-17 (R) | 23 | Clustering: Evaluation methods [pdf (teaching/CSEx0647Fall17-23-ClusteringEvaluation.pdf)] |
| 14 | 11-21-17 (T) | 24 | Outlier analysis: Concepts [pdf (teaching/CSEx0647Fall17-24-OutlierConcepts.pdf)] |
| 14 | 11-23-17 (R) | - | Thanksgiving break |
| 15 | 11-28-17 (T) | 25 | Outlier analysis: Methods [pdf (teaching/CSEx0647Fall17-25-OutlierMethods.pdf)] |
| 15 | 11-30-17 (R) | 26 | Lecture: Mining behavior datasets - Data-driven behavior modeling |
| 16 | 12-05-17 (T) | 27 | Lecture: Mining text datasets - Meta pattern-driven information extraction |
| 15 | 12-07-17 (R) | 28 | Course review |
| 16 | before 12-15-17 | - | Final exam |