MSDS692_Syllabus

Instructor Information

Refer to Discussion Forum, Facilitator Introduction, and Expectations

Course Title

MSDS692 - Data Science Practicum I

Course Description

Continues a hands-on Data Science lab experience that covers all phases of a typical data science project, data discovery, data preparation, model planning, model building, and communicating results. Concludes with a mock presentation to stakeholders, senior management, or investors.

Prerequisite Courses

MSDS600, MSDS610, MSDS650

Course Outcomes

Upon completion of this course, learners should be able to:

1. Apply data cleaning and EDA techniques to a real-world dataset
2. Create and implement a plan for taking raw data and extracting useful information from data
3. Evaluate results of data science analysis on a real-world dataset
4. Synthesize results of a large data science project into a short video and website presentation

Course Materials

Required Texts

None

Required Resources

None

Technology Tools

Dependent on student's specific project.

Pre-Assignment

See the Course Assignments and Activities table below.

Course Assignments and Activities

Week	Graded Assignments

1: Project Proposal	Introductions – initial post required by Wednesday of Week 1 Project Proposal
2: Proposal revision or progress report	Refined Project Proposal OR Weekly Progress Report Weekly Discussion
3: Progress report	Weekly Progress Report Weekly Discussion
4: Progress report	Weekly Progress Report Weekly Discussion Project Review (one time in week 4, 5 or 6)
5: Progress report	Weekly Progress Report Weekly Discussion Project Review (one time in week 4, 5 or 6)
6: Progress report	Weekly Progress Report Weekly Discussion Project Review (one time in week 4, 5 or 6)
7: Progress report	Weekly Progress Report Weekly Discussion
8: Final presentation	Final Project Deliverables (code base, blog/github, and presentation) Weekly Discussion

Summary of Assignments and Percentage Weight:

Assignments	Points	Weighted Percentage
Communication and reports (7 @ 5pts each, Project Review for 10pts)	45	20%
Overall project	80	40%
Video/live presentation	25	12.5%
Website presentation (Github, Blog, etc.)	15	7.5%
Class discussions (7 @ 5pts each)	35	20%
TOTAL	**200**	**100 %**

Detailed breakdown of scoring

Category	Description	Points
C	Communication and reports	45
O	Overall Project	80
P	Video/live Presentation	25
W	Website presentation (Github, Blog, etc.)	15
D	Class Discussions	35
	Total	200

Category	Criteria	Points

O	Problem Source (higher points if it requires more effort to get data and define problems) - create own problem and data, from company/work, from Kaggle or similar	5
O	Defining problems effort - extra effort defining problems and analysis milestones (+1 bonus)	5
O	Problem difficulty level	5
O	Data collection effort - special tools, multiple source, scraping	5
O	Data difficulty level - multi-dtype, manual table join, missing data, wrong labels, messy data	5
O	Data cleaning effort	5
O	Data inspection effort (initial analysis/EDA)	5
O	Feature selection/ feature engineering - no-feature selection mentioned (ok), feature selection by intuition (more), feature selection by machine learning (most)	5
O	Major tools used - higher score for tools requiring coding effort such as Python and R, lower for only GUI-based tools such as Tableau	5
O	Use of packages/libraries	5
O	Incorporation of machine learning methods and/or business intelligence (actionable information for making a business decision)	5
O	Effort using analysis methods (e.g. optimization of a machine learning model)	5
O	Scientific questions and selecting appropriate analysis methods	5
O	Data imbalance check and implementation; data augmentation	5
O	Problem solving and learning new things independently	5
O	Project time management	5
P	Presentation overall quality (Clear explanations and organization)	10
P	Use and explanation of visualizations	5
P	Explanation of concepts and methods	5
P	Presentation time management	5
W	Overall tidiness, code organized and commented	5
W	Project summary - summary should be on landing page or easy to find - visualizations should be on landing/summary page	10
C	Project review	5 each
C	Proposal (and revision, if necessary); progress reports	5 each
D	View at least 2 other students' final presentations and website final products, and ask at least one question for each student (post question on worldclass discussion post page).	

CCIS Policies

Review the CCIS Policies on the Regis University website.

Activity Details

Task: View this topic