EDUC 691: Core Methods in Educational Data Mining
Fall 2020
Professor Ryan Baker

SYLLABUS

Instructor Info
Email: rybaker@upenn.edu
Office hours: Wednesdays, 815am-9am
Course time: Monday, 715pm-815pm
Office hours and course location: https://bluejeans.com/rybaker/
Class discussion forum: piazza.com/upenn/fall2020/educ691

Required Texts:
- Baker, R.S. (2020) *Big Data and Education,* 6th edition
  https://www.upenn.edu/learninganalytics/MOOT/bigdataeducation.html

Information on how to obtain other course readings will be provided in class. Most are available on the course schedule webpage

Course Goals: This course covers core methods in educational data mining. Students will learn how to execute these methods in standard software packages, and the limitations of existing implementations of these methods. Equally importantly, students will learn when and why to use these methods. Discussion of how EDM differs from more traditional statistical and psychometric approaches will be a key part of this course; in particular, we will study how many of the same statistical and mathematical approaches are used in different ways in these research communities.

Course Pre-requisites: EDUC767, or prior experience with statistics or data mining, or instructor permission.

Assignments: No exams or quizzes will be given.

Across the semester, eight basic assignments and four creative assignments will be assigned. The assignments are listed below in the class schedule. Every student must do six of the basic homework assignments (your choice) and three of the creative homework assignments and turn them in by posting them to the discussion forum. For the basic homework assignments, you must complete 3 of assignments 1-4, and 3 of assignments 5-8. For the creative homework assignments, you may drop any of them except for the final creative assignment. You must do the final creative assignment.

If you do more assignments than required, I will give you feedback, but I will not grade extra assignments and let you have the ones with a higher grade. If you turn in all 4 of the first 4 basic assignments, I will only grade 1-3. If you turn in all 4 of the second 4 basic assignments, I will only grade 5-7. If you turn in all 4 of the creative assignments, I will only grade 1,2, and 4. If you turn in all 3 of the second 3 basic assignments, I will only grade 4-5. To repeat, you cannot get a higher grade in this class by doing more assignments. You cannot get extra credit by doing more assignments. The point of this policy is to let you choose which material to focus your energy on, and to do a better job on that material.

Participation in asynchronous activities will also be part of the course grade. For each creative assignment you complete (not including creative assignment 4), you are expected to also provide substantive comments on at least four other students' submissions. For these posts, there is no length requirement, but the posts must offer a critical and meaningful perspective on how that student did the assignment. To count towards your grade, your posts must be submitted within five days of the assignment being posted.

In addition, you are expected to watch the asynchronous videos and post questions and comments on each week's content, or ask questions and comments in the synchronous class. You will not be graded on the content or quantity of this type of participation, but if you don't do this, you won't get nearly as much out of the class.

Given the state of the world in 2020, extensions will be given on the assignments as needed. However, please be reasonable.

Grading
- 6 of 8 Basic Assignments 6% each (up to a maximum of 36%)
- 3 of 4 Creative Assignments 13% each (up to a maximum of 39%)
- Asynchronous participation 8% each (up to a maximum of 24%)
- 1 bonus point

BONUS: For every creative assignment, there will be a special bonus of 20% for the best hand-in. "Best" will be defined specifically in each assignment.