

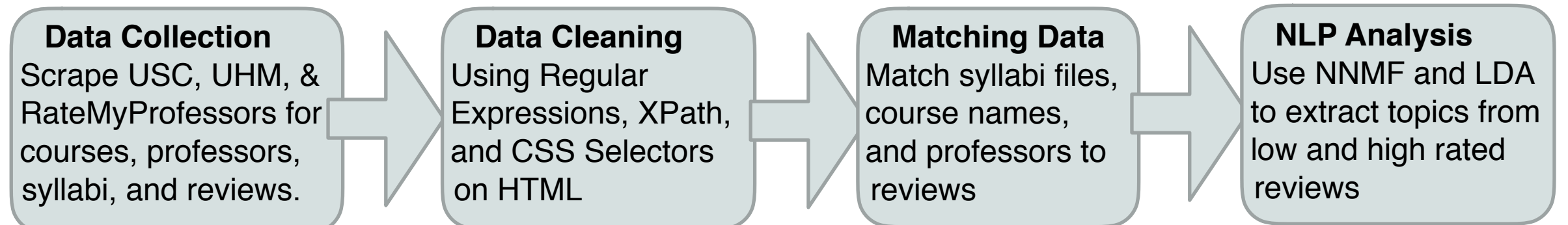
Understanding Features of Curricula in Engineering/CS Affecting Engagement and Retention

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Problem

- Barriers causing lack of minority participation in Engineering and CS:
 - Missing out on perspectives and ideas from diverse cultural backgrounds
 - Women: 19% of all bachelor's degrees in Engineering in US
 - Latinx & African American students: 8% & 7% of undergrad engineering programs

Overview



- Research Questions:
 - What factors of a course contribute to a positive or negative experience in a student?
- Solution:
 - Gather as much course materials from university sites (syllabi) and understand the preferences of students through reviews on [RateMyProfessors.com](https://www.ratemyprofessors.com)
 - Analyze course features and propose a set of guidelines for educators to reduce students' barriers to learning

Data Collection Results:

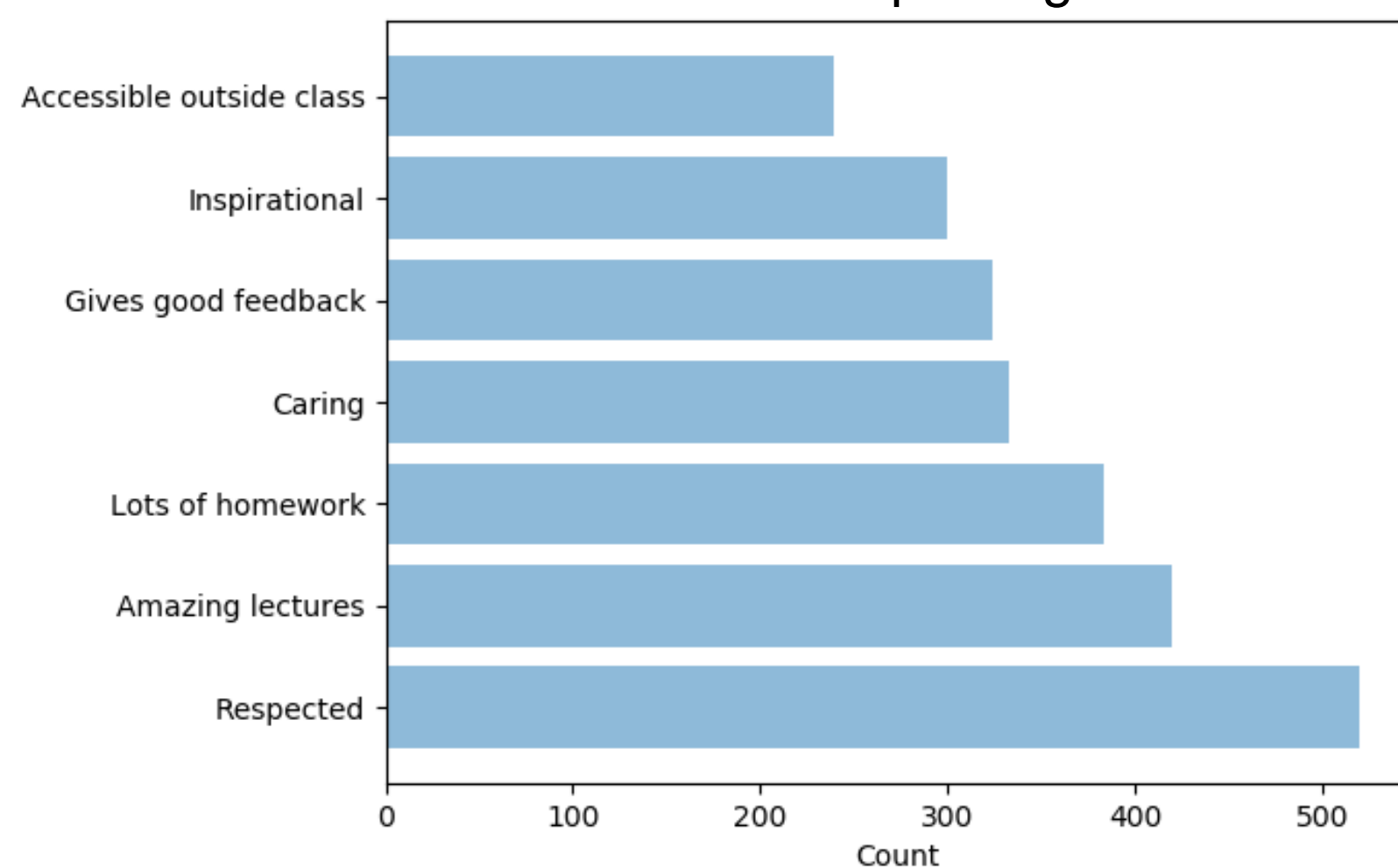
RateMyProfessors: 4222 reviews, 260 professors
USC Schedule of Classes: 4244 course sections, 1212 syllabi

NLP Insights: Topic Modeling

Inferred Topics in Positive Reviews:

clarity, concise, organized, funny, humor, patient, understandable, inspire, succeed, love, passionate, interesting, fun, available, helpful office hours, ta, friendly, accessible, informative, easy to understand, fair grading, straightforward

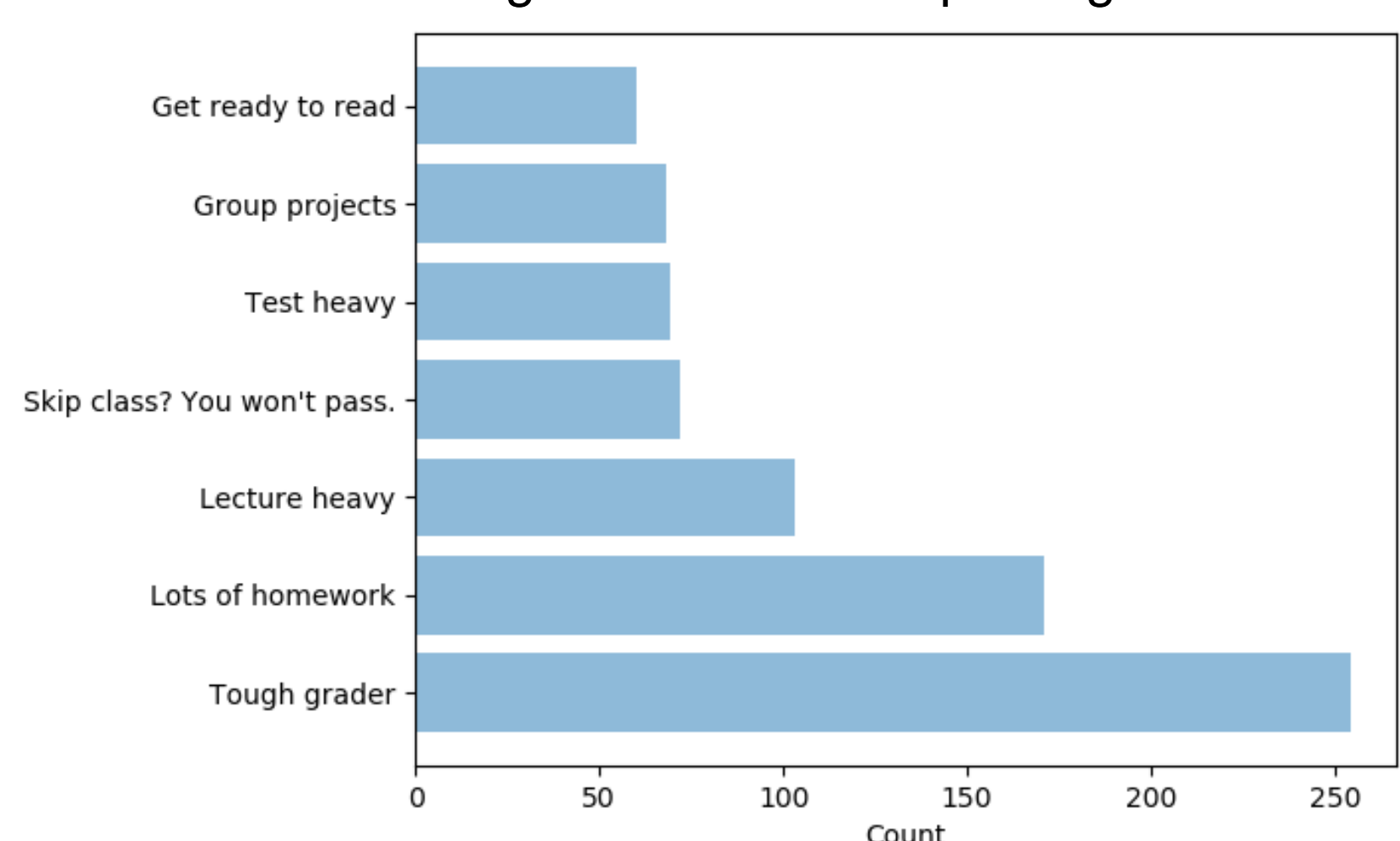
Positive Reviews Top 7 Tags



Inferred Topics in Negative Reviews:

confusing, memorization, mumble, doesn't teach, left with questions, just slide lectures, bad speaking boring, pointless, difficult finals and midterms, unclear, accent, long and boring lectures and assignments, theory based, doesn't apply content to real life, monotone

Negative Reviews Top 7 Tags



Future Work

- Based on the following factors, determine the effect on the overall review of a course:
 - Independent variables: # of exams, # of group activities, # of support services, class size, lecture time, number of prerequisites, hours of work, textbook cost, level of grading curve, lecture presentation style (hands-on, visual, audio)
 - Dependent variable: overall student satisfaction with a course



SCAN ME

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If interested contact mmedallo@isi.edu
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USC Viterbi

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