

Data Management and Data Analytics Capstone Topic Approval Form

Student Name: [REDACTED]

Student ID: [REDACTED]

Capstone Project Name: University of California Graduate Admissions and Cost of Housing

Project Topic: Graduate application and admission at the University of California in correlation to cost of housing near individual campuses

Research Question: Do some campuses at the university of California experience a change in application and admission rates for graduate students in correlation to the cost of housing near campus?

Hypothesis: Increased cost of housing near some UC campuses will correlate to lower application and admission rates of graduate students.

Context: I am a researcher at the University of California, Riverside in the Neuroscience department, and some graduate students and faculty have expressed a concern that incoming cohorts of new students seem smaller than ever before. This is also a discussion point for some student unions on campus, as they are concerned about the availability of student housing and the associated budget for student housing development. I would like to investigate correlations between the cost of housing within commuting distance of different UC campuses and the application/admission rates of graduate students. I am interested specifically in postdoctoral students (not academic master students), and will consider differences between different student demographics. I believe this may prove useful in future considerations concerning the importance of student housing development.

Data: Graduate student data from UC campuses, and the related student demographics will be required. Since cost of rent is more relevant to incoming student cost of housing than the cost of home sales, rental cost data by region will be required.

I will be using the University of California's publicly available data for student information. For the cost of housing data, Zillow's publicly available data, the Zillow Observed Rent Index (ZORI) will be used.

All data used is either publicly available from government institutions, or has been made publicly available by private institutions.

Data Gathering: The data used is available as csv data and will be organized/processed in excel and read into dataframes using Python for cleaning and analysis.



Data Analytics Tools and Techniques: To determine how cost of housing for students correlates to application/admission rates, I will have to generate mean and median costs for the state and compare how each campus's region compares to state-wide values for cost of rent. I will attempt to visualize the relative cost of housing and incoming student data by year, and search for significant interactions between the incoming student and cost of rent data.

Justification of Tools/Techniques: Since this data is relevant to organizations such as student unions and university budgeting committees, having the data compiled and visualized in an easy to understand format would make it more accessible for sharing during committee and board meetings.

Programming/Development Language(s), if applicable: Python

Operating System(s)/Platform(s), if applicable: MSwindows

Database Management System, if applicable: N/A

Project Outcomes: *List the key anticipated project outcomes and deliverables in fewer than 500 words.* I will attempt to deliver easily understandable visualizations concerning trends in incoming graduate students and the possible correlation to cost of rent around individual UC campuses. The presented data should answer questions concerning the questioned decrease of incoming students over the past 5 years and show any significance (or lack thereof) in its relation with the cost of rent around a campus.

Projected Project End Date: 11/30/2023

Sources:

University of California Information Center: <https://www.universityofcalifornia.edu/about-us/information-center>

Zillow Research Data: <https://www.zillow.com/research/data/>

ZORI Methodology: <https://www.zillow.com/research/methodology-zori-repeat-rent-27092/>

Human Subjects or Proprietary Information

Does your project involve the potential use of human subjects? (Y/N): No

Does your project involve the potential use of proprietary company information? (Y/N): No

STUDENT SIGNATURE



By signing and submitting this form, you acknowledge that any cost associated with the development and execution of your data analytics solution will be your (the student) responsibility.



TO BE FILLED BY A COURSE INSTRUCTOR

The capstone topic is approved by a course instructor.

COURSE INSTRUCTOR SIGNATURE:

A handwritten signature in blue ink, appearing to read "Jim Ashe".

Jim Ashe, Ph.D. Mathematics

COURSE INSTRUCTOR APPROVAL DATE:

Tuesday, [REDACTED] 2023

Project Compliance with IRB (Y/N): Y

