Project Abstract:

Stat 311 – Regression Analysis

Description:

Given a data set of 1728 Homes in Saratoga, NY, and 17 characteristics of each house, we were to determine a sufficient way to predict the market cost of a home based on the 17 characteristics using regression analysis. The project was assigned to a group of two, with the goal of creating a technical report and giving an oral presentation.

Analysis methodologies:

The data itself was messy, requiring transformation of variables to work with the assumption of Least Squares regression. To determine which parameters to use, we utilized Regression analysis and created some hypothesized models to compare. From there we had to use hypothesis testing to determine which was the most significant, and then validate the model.

Programming:

We used JMP for all statistical analyses.

Transferable Skills:

Presentation Skills, Writing Skills, Time Management Skills, Teamwork Skills, Leadership Skills

Post Project Debrief:

This project took place before my time in Advanced Mathematical Modelling. The importance of this caveat is because in Advanced Modelling, the entire purpose of the class was to complete projects. We were educated on well proven strategies of working as a team and refining our technical writing skills. I did not have this knowledge for *this* project. We were also given other weekly assignments which distracted me from working on the project instead.

This project was not my best work, and first exposure to working as a team in a long time. I was also prompted by the professor that I would be working with a student that wasn’t doing too well in class. They asked if this was OK first, but I accepted with the guise of “Somebody has to work with them”. This came with an easier data set than the other teams, but I was wholly unaware of how to work with this kind of colleague.

As we were unfamiliar with task scheduling, or the general direction to take the project, the product became largely my work that was scrambled together nearing the deadline, without the benefit of additional insight, revisions, or comments. With the sections written by my colleague having a drastically different voice and insufficient grammar.

Ultimately, I can look back at the project and say I’ve grown a lot from it.

If I could redo this project, I would apply the multitude of knowledge I gained from Advanced Mathematical Modelling: 1) drafting a Team Charter to ensure we have the same goal, 2) Utilizing a Task Schedule to avoid procrastination, and set boundaries for what should be an even workload, 3) Provide in-line comments and revisions to works by my colleagues to avoid the *sharp* change in voice.

On the technical side, the conclusion in our report and presentation was to utilize model 3, which was significantly more complicated compared to model 2, next time I plan to emphasize the effect of model simplicity when there’s such a marginal improvement on predictive power. There were also some logical flaws in my examination of the data and spread of the data. The comments by the instructor are keep in the power point for my own improvement.