

Penn State Report Part 3

Abstract

Universities use low resolution cameras as a means to promote campus image and monitor public areas. These cameras can be used as a means to predict social patterns and eating habits of students to better accommodate them through out their college career. This could possibly be of interest to psychologist, campus administration, and various services students use in order to reach a maximum amount of students, host various events, or provide food services at the appropriate times of the day.

Introduction

Webcams can be used in university to record social habits of students on a given day. This data could be quite important in setting up meal plans, informing students of events on campus, and raise overall school spirit. The webcams would have to be located in the most central part of campus. An example of this would be the main center of campus, food courts, or major intersections. By recording this data, this could help improve student lifestyles and increase attendance of major events on campus.

Figure 1.1



Method

The webcam is located in The Hub, which is the University Center of Pennsylvania State University. This location is the center for food, studying, and socializing for the whole campus. Data is collected in hour long chunks of time and data on the amount of visible students on the screen is collected. The average amount of students within the chunk of time and the maximum students is calculated in order to get a good idea of the most populated times and the factors involved. Weather patterns will be collected to see if there is a major connection between weather and social habits of students. The data on what the students are doing however will not be collected since the visual information from the webcam can be ambiguous and more cameras around The Hub will be needed in order to accurately represent this information

The actual data collection will be done by human observation of the pictures collected by the webcam. In order to keep the counts accurate, the whole bottom floor and the front half of the second floor are used as the space for data collection. No issues arose with the data collection since the area has a high luminance and good contrast.

Hypothesis

With the type of data being recorded over time, some hypotheses are formulated. The most populous times in The Hub will be during the lunch and dinner times with breakfast having a small number of people. Lunch will probably be the most populous since people tend to finish homework, study, and meet with friends during this time. During around 12:00pm – 2:00pm and 6:00pm – 8:00pm, there will be the highest concentration of students. Also when the weather is favorable out, there will be an even high spike of students during peak times and a higher overall average. Finally, there should be a small spike of students during weeknights when students go out to party and come back to The Hub to eat or meet with other friends. This hypothesis was formulated from perceived habits of college students.

Figure 2.1

Peak Time 12:00PM



Figure 2.2

Trough Time 6:00AM



Results

After gathering more data, the hypothesis had to be modified since evidence collected suggested otherwise. Instead of the evening times being from 5:00pm – 6:00pm, the hypothesis is now from 6:00pm – 8:00pm. The highest numbers was on Tuesday, March 24th during the 12:00pm time slot with the peak number of students at 47 and the average of 41. This filled most of The Hub with students eating, studying, walking, and conversing with friends. The lowest times were on Wednesdays during the late night and early morning times. Also to help reinforce the effects of weather, data was recorded near a peak time on Thursday and there were a significant lower number of students on that day, which was cloudy, comparatively to the nice days. The data consistently supports that weather has an effect on the outgoingness of students. One exception was during 12:00pm on 11th and the 25th. There was a function that day that attracted more people. However, the evening peak time hasn't shown a significant peak comparatively. This could be because of the lack of data recorded during this time slot and the days recorded were relatively cool days.

Figure 2.1

Time Slots	AVG	MAX
12:00PM - 2:00PM	35	47
3:00PM - 5:00PM	16	26
6:00PM - 8:00PM	17	19
9:00PM - 12:00AM	9	12
1:00AM - 6:00AM	0	0
7:00AM - 8:00AM	2	2
9:00AM - 11:00AM	16	22

Figure 2.2

		Avg	Max	
4/6/2006	11:00AM	24	20	cool, cloudy
4/11/2006	12:00PM	40	45	warm, sunny
	1:00PM	24	28	warm, sunny
4/12/2006	6:00AM	0	0	warm, sunny
	7:00AM	2	2	warm, sunny
4/16/2006	9:00PM	8	9	cool
4/18/2006	3:00PM	19	26	warm, sunny
	4:00PM	14	15	warm, sunny
4/24/2006	9:00AM	8	13	cool, sunny
	10:00AM	10	12	cool, sunny
	11:00AM	21	22	cool, sunny
4/25/2006	12:00PM	41	47	cool, sunny
	10:00PM	9	11	cool, rain
	11:00PM	10	12	cool, rain
4/26/2006	2:00AM	0	0	cold
	5:00PM	14	15	cool, sunny
	6:00PM	17	19	cool, sunny

Discussion

Formulating the in a more cohesive matter has shown that for weather effects and afternoon brackets, the hypothesis is close to being accurate. However, this has also shown that more data is needed in the evening brackets to see if the hypothesis is fully accurate. The operational definitions so far have been affective in giving detailed information of the meeting habits of Pennsylvania students. There aren't many factors that would change these results unless it's finals week or there is a major event happening that would change the regular social patterns of the students, which happened on the 25th and attracted more than the average amount of students on a relatively cool day.