**Do We Have a Mouse Problem?**

**Team:** Kyle Chinn – Graduate Student

**Type of project**: Custom image identification

**Description:** The objective of this project is to develop an algorithm that is proficient at identifying whether or not mickey is in a photograph. I would like to be able to identify it from a simple mickey head logo, all the way to the him being in a picture with people at Disneyland. I am not sure if that will provide too many obstacles, so I will remain flexible at downscaling the objective.

**Proposed Methodology and Techniques:** I will be using python as my scripting language for my final project. The primary packages I will be using for the image processing portion will be PIL and OpenCV. Since Mickey’s head is his most distinguishable feature, I plan on using that as the primary identification indicator. To do this I will be exploring multiple techniques such as Otsu’s method, Gaussian Blur, and Template matching.

**Implementation Choice:** Python

**References (at least two references which do not include the textbook):**

* A Generalization of Otsu’s Method and Minimum Error Thresholding:

<https://arxiv.org/pdf/2007.07350.pdf>

* Investigation on the Effect of a Gaussian Blur in Image Filtering and Segmentation: <https://www.researchgate.net/publication/261278360_Investigation_on_the_effect_of_a_Gaussian_Blur_in_image_filtering_and_segmentation>
* OpenCV Template Matching: <https://opencv-python-tutroals.readthedocs.io/en/latest/py_tutorials/py_imgproc/py_template_matching/py_template_matching.html>

**Tentative Schedule:**

Week 5

* Project proposal

Week 6

* Paper reviews
* Data collection

Week 7

* Python coding
* Data Collection

Weeks 8-9

* Python coding
* Paper writing

Week 10

* Present