CS4400 *Alex Clemmer, u0458675*

Problem Set 4

1 3.62

Please note the following information on your assignment:

1. What is the value of M?

   13

2. What registers hold program values i and j?

   `%ebx and %ecx`

3. Write a C code version of `transpose` that makes use of the optimizations that occur in this loop. Use parameter `M` in your code rather than numeric constants.

2 Written Problems

Answer the following questions in 50-100 words each:

1. What is the difference between supervised, unsupervised and reinforcement learning?
2. List at least two real-world problems (other than those discussed in class) for each of the categories: supervised, unsupervised and reinforcement. For one of the supervised problems, what is the form of the output and what might be a reasonably input? For the reinforcement learning problem, what might be the state space, action space and reward function?
3. What is overfitting? What is underfitting? How is overfitting controlled?
4. Getting labeled data for supervised learning is expensive. What are some of the approaches to deal with this problem?