Math 320 – Computer Methods in the Mathematical Sciences I.

Project Title: Neural Networks

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1 Presentation

Comments:

- Nice brain explanation – would have been improved with images.
- Good exploration of Universal Approximation Theorem.
- Bias image – good!
- "So much chain rule" :-)
- Great that you walked through the code and implementation. When the display was buggy because of the projector, you rolled nicely with the punches –good job!

Grade: 9.5/10

Great presentation of a complicated but fascinating tool. Could perhaps have been a bit more polished, but overall very well done!

2 Paper

Comments:

- The comparison to the brain should be taken with a grain of salt; for example, the brain is certainly not a feedforward network.
- *Are these figures from somewhere? If so, citation is needed.* Found the citations at the end – ideally mention this in the body of the text.
- Well done including an example (p 4-5), but it would have been better to be even more explicit. (e.g. actual real numbers for the inputs and weights)
- Great description of bias!
- I think Figure 8 is describing raising the number of neurons in one layer (rather than the number of layers).
- Good job going through different types of gradient descent.
- Beautiful images on page 9!
- Nice commenting on the code.

Grade: 9.5/10

Great paper with some clearly sophisticated programming. The organization & presentation of the paper could have been neater, and some of the technical detail was a bit off. On the whole, though, it was an ambitious paper that did a tremendous job.