Neural Networks

A (very) light introduction

Final Project Writeup

W209 Section 2, Fall 2016

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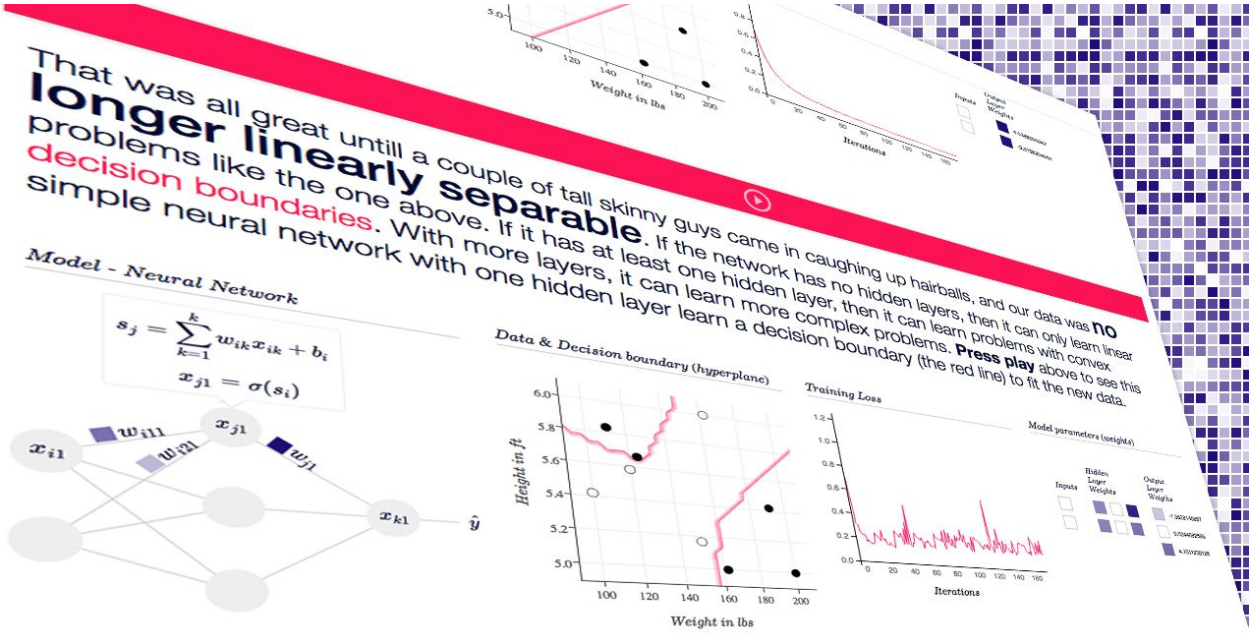

http://machinelearningalgorithmsillustrated.azurewebsites.net/

Team members task breakdowns

Task	Kyle	Lin	Jun	Walter
Concept discussion	What data to use. Overall site look and feel	What data to use. And explore existing youtube tutorials	What data to use. Explore Flask	What data to use. How to train model on the fly
Mock up	Come up with most comps	Mock decision boundary chart	Created early version of learn page using balsamiq	Explored gradient descent and decision boundary charts
Website design	Overall layout and graphic design. All pages.	Learn page / decision boundary	Learn page / loss	Play page
Infrastructure	Explore what model to use in python and TensorFlow Set up a simple as possible javascript framework for the website	Setup site hosting on Azure and explore TensorFlow VM	Explore Flask as an option	Host nodejs site for online model training
Coding	Html/CSS/Javascript/IPython notebook/poltly.js/D3	Html/CSS/Javascript/plotly.js explored conrec.hs	Html/CSS/Javascript/ mainly using D3	Play page Html/CSS/Javascript/ node.js/ react/ brain.js
Usability testing	2 users from the MIDS program without background in NN, but some ML.	2 users, one with no ML background. One software engineer with some ML background.	2 local test users. One software QA engineer and one CPA. Both have no ML and NN background.	

Additional Notes:

Completed the Math page.
Minor CSS adjustments.
Minor text changes for clarity.
Move the Play view to a permanent location with a slight performance improvement.

Future Work:

Performance - the animations block each other and are not synchronized
Another round of usability testing to check our improvements resulting from the first round of tests.
Add visualization for gradient descent to the Learn view.