

901700 - 2017 Acoustical Ocean Eco

Week 51

1. Paul McGill
 - a. Trying to set up my local copy of OrCAD to connect to MBARI's CIS database. Will need Jose's help with this.

Week 50

1. Paul McGill
 - a. Created symbols for new parts and submitted to CIS database, waiting for Jose to create footprints. Looking for ways to shield xducer cables into shield.

Week 48

1. Paul McGill
 - a. Designing Faraday cage for Simrad sonar. Did Zoom call with Jose to get my OrCAD set up correctly for this.

Week 47

1. Paul McGill
 - a. Drawing schematics for Simrad sonar noise-shielding enclosure.

Week 43

1. Paul McGill
 - a. Still ordering EMI shield materials for WBT Mini sonar.

Week 42

1. Paul McGill
 - a. Ordering materials and tools for sonar Faraday cage. Designing power input filter circuit.

Week 41

1. Paul McGill
 - a. Worked with Chad W in the lab to measure the sensitivity of the Simrad WBT sonar to external noise sources. Bottom line - it's VERY sensitive. Working on mitigation strategies.

Week 38

1. Paul McGill
 - a. Learning how to set up more complex neural nets to improve accuracy. Concepts are easy, syntax is hard.

Week 36

1. Paul McGill

- a. Arranged for a Mathematica pre-release license so I can run latest version on Deepdark without buying another license. Researching methods of hyperparameter tuning for our neural network to improve accuracy above the current 75%.

Week 35

1. Paul McGill
 - a. Working on hyperparameter tuning code for sonar neural network.

Week 31

1. Paul McGill
 - a. Implemented data augmentation on sonar data and achieved new high of 77% accuracy with neural network. Still tuning hyperparameters.

Week 29

1. Paul McGill
 - a. Got sonar classification neural network running with all 4 GPUs on Deepdark, for a 60x speedup from CPU alone. Testing new network architectures.

Week 20

1. Paul McGill
 - a. Wrote Python code to augment sonar data set.

Week 18

1. Paul McGill
 - a. Battled configuration problems with Deepdark not recognizing its GPUs, but finally got it going again.

Week 16

1. Paul McGill
 - a. Still trying to reconcile differences in results between Mathematica and MxNET. Am trying to import results from one framework into the other to offer some insight.

Week 15

1. Paul McGill
 - a. Still banging away on machine learning code. Can't get raw MXNet performance to match Mathematica performance even though the nets are identical. Will continue to beat my head against it.

Week 14

1. Paul McGill
 - a. Finally got MXNet code running on Deepdark for machine learning, which gives me a x200,000 speedup. Having network problems which keep dropping my connection to Jupyter notebook server on Deepdark; I am troubleshooting.

Week 13

1. Paul McGill

- a. Continuing to work on processing sonar data with neural nets. Currently struggling to get data imported in a form usable by MXNet. Many functions done automatically by Mathematica must be performed explicitly by Gluon. With power comes responsibility.

Week 12

1. Paul McGill
 - a. Working on neural network code for classifying sonar target data. We're all becoming software engineers...

Week 9

1. Paul McGill
 - a. Finally found and corrected problem with MXNet installation on DeepDark and can now run neural nets with multiple GPUs.

Week 7

1. Paul McGill
 - a. Modified new Linear Tech power supply to output 15 V in preparation for noise testing on Simrad sonar.

Week 6

1. Paul McGill
 - a. Trying to use a signal generator and oscilloscope's FFT function to characterize filters in the 0 to 500 kHz range, as we don't have a spectrum analyzer that works this low.