

Name: Joshua Salas
Student ID: 80644497
Email: jsalas19@miners.utep.edu

Problem 1

- A. This causes the expected count to stay below the observed for both 'circle' but increase above observed for 'triangle', until about ~ 1.11 which then reverses the roles of the expected count.
- B. The red bar shows a decrease in the expected count and blue bar represents an increase in the expected count.
- C. When solve is selected

Log-Likelihood Scores
Current LL: -71.932

Data & Model Options





Change the data

New random challenge
New counts

Regularization

☒ None
☐ l_1
☐ l_2

Type Counts: Observed and Expected

	30	30	15	15
				
$N = 60$	10	10	5	5
				

Hints

☒ Show gradient

Step size = 0.1000

4 iterations done

Step Solve

Feature Weights

circle	<div><div></div></div> 0.5493	solid	<div><div></div></div> 0.342
triangle	<div><div></div></div> -0.5493	striped	<div><div></div></div> -0.342

Zero weights

- D. When regularization l_1 is selected.

Log-Likelihood Scores
Current LL: -75.194

Data & Model Options

Change the data





New random challenge
New counts

Regularization

☐ None
☒ l_1
☐ l_2

$C = 2$

Type Counts: Observed and Expected

	30	27	15	16
				
$N = 60$	10	11	5	6
				

Hints

☒ Show gradient

Step size = 0.1000

5 iterations done

Step Solve

Feature Weights

circle	<div><div></div></div> 0.4642	solid	<div><div></div></div> 0.276
triangle	<div><div></div></div> -0.4642	striped	<div><div></div></div> -0.276

Zero weights

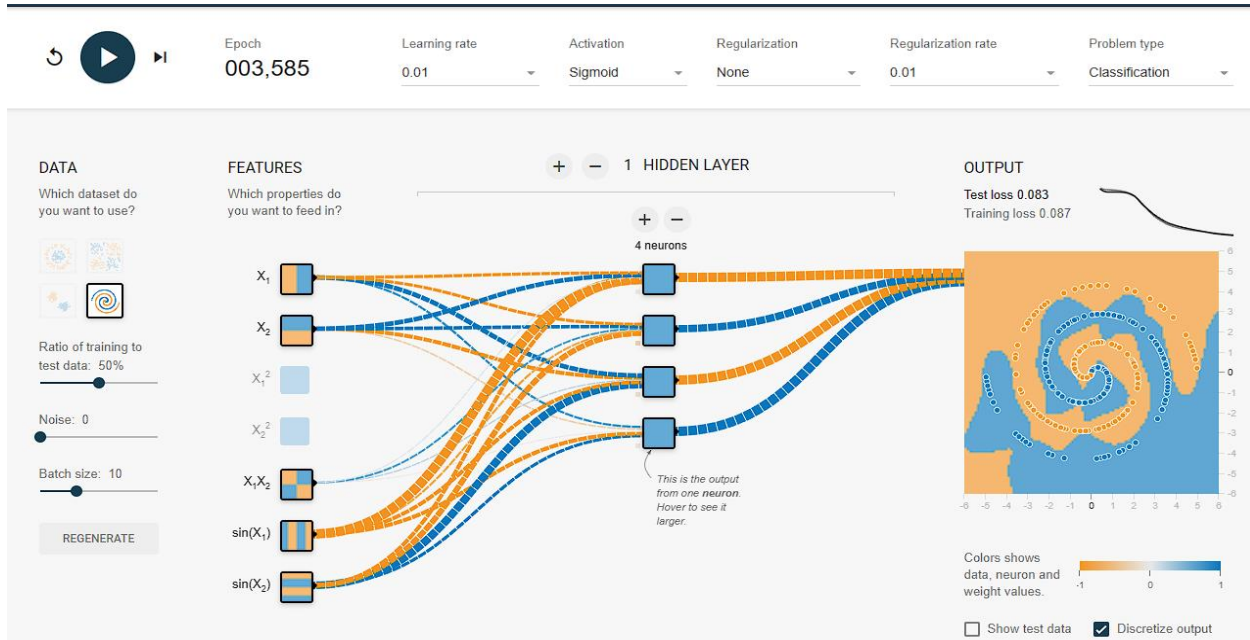
Name: Joshua Salas

Student ID: 80644497

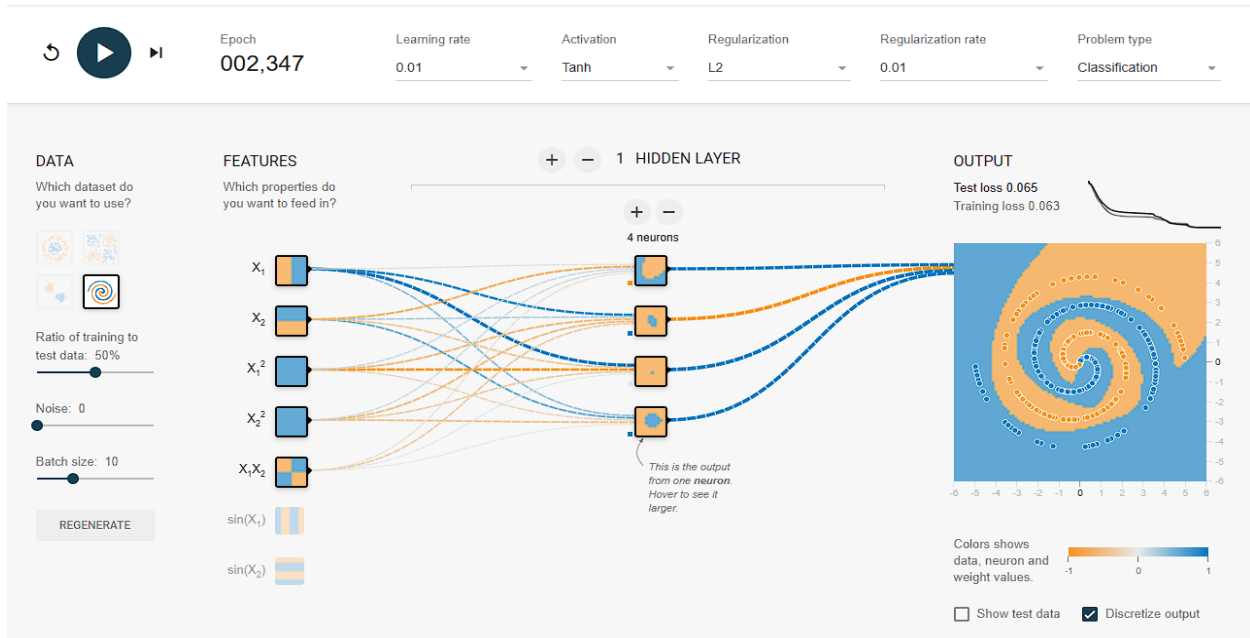
Email: jsalas19@miners.utep.edu

- E. This is due the regularization of the model which helps reduce the over and underfitting of the previous result.
- F. Z ensures that the value we calculate does not exceed 1 meaning, allowing our result to be bounded between 0 and 1.

Problem 2



➔ Adding regularization should both lower the number of epochs and training/test loss



Name: Joshua Salas
Student ID: 80644497
Email: jsalas19@miners.utep.edu

Problem 3

- A. Kernel Size: 3x3
Stride length: 1
Maxpool window size: 2x2

- B. This CNN only has two animals to compare against and so it seems fair to assume it would try to find a features that are similar. Thus, I believe this says that class 'Espresso' contains features that closely resemble those of the features identified in the 'Coyote' and 'Rattlesnake' classes.