**Critical Thinking 4**

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CSC580: Applying Machine Learning and Neural Networks - Capstone

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**Toxicology Testing**

**Overview**

### What the script does

* Loads Tox21 via DeepChem.
* Keeps the first task only.
* Builds a TF v1-style model (placeholders, 1 hidden layer with ReLU, dropout, sigmoid output).
* Uses sigmoid cross-entropy loss and Adam optimizer.
* Trains in mini-batches with TensorBoard summaries.
* Prints and saves validation/test accuracy to metrics.txt.
* Saves a loss curve image (loss\_curve.png).

**Output from metrics.txt:**

Tox21 NN (first task)

Validation accuracy: 0.9591

Test accuracy: 0.9592

**Screenshot of loss\_curve.png:**

Screenshot from Tensorboard loss graph:

