Signature Verification Project: Evan Ackerman and Patrick Schlosser

Problem Definition

Goal: Identity Agnostic Signature Verification

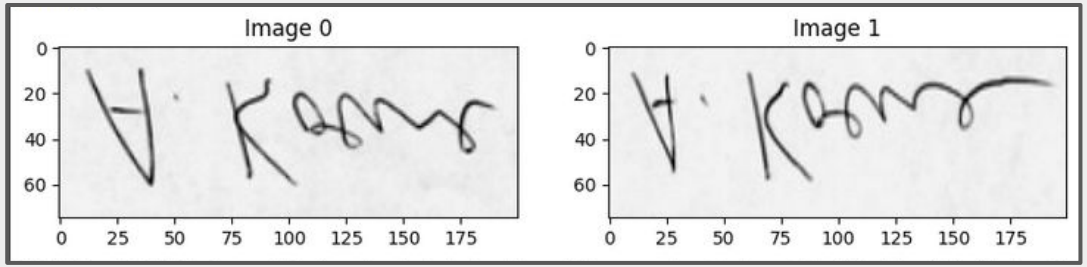
Differentiating Features:

- Character identity, spacing, intensity, proportion, size, and shape
- Writing Speed
- Beginning and ending strokes

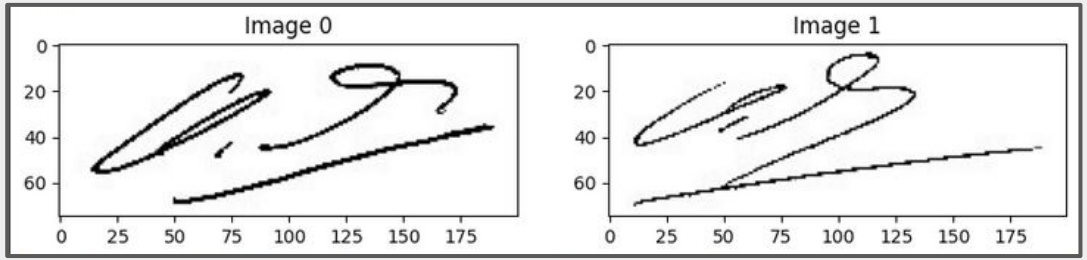
Example Applications:

- Bank Check Fraud
- Fake Sports/Historical Memorabilia

Genuine Rotated Data Pair:

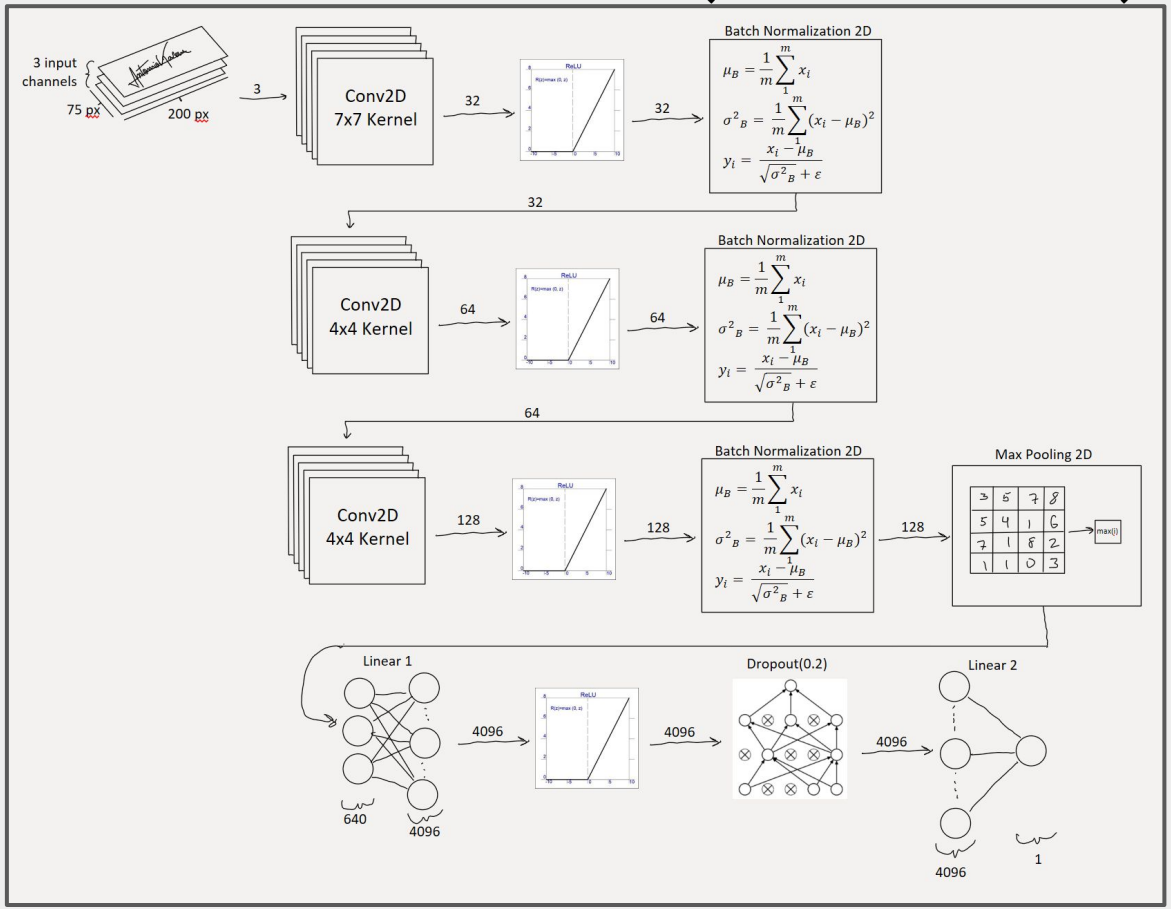


Forged Data Pair:

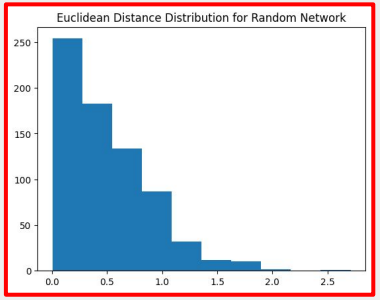


Solutions Implemented

X 2 (Siamese Network)

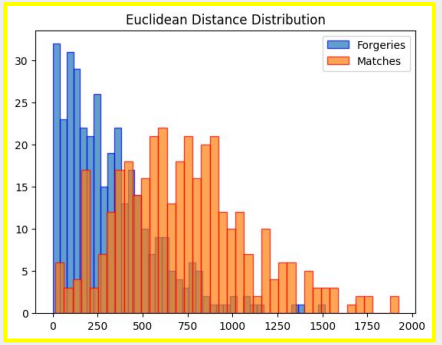


Random Weights Distribution



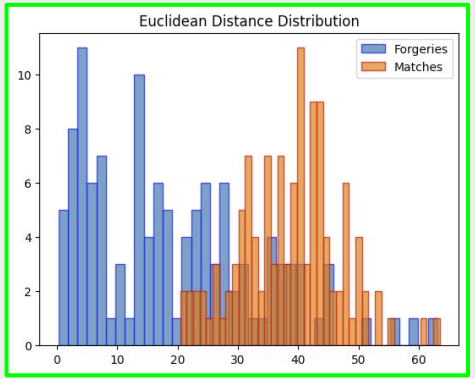
Original Model Distribution

no clear decision boundary



This Model Distribution

decision boundary starting to come

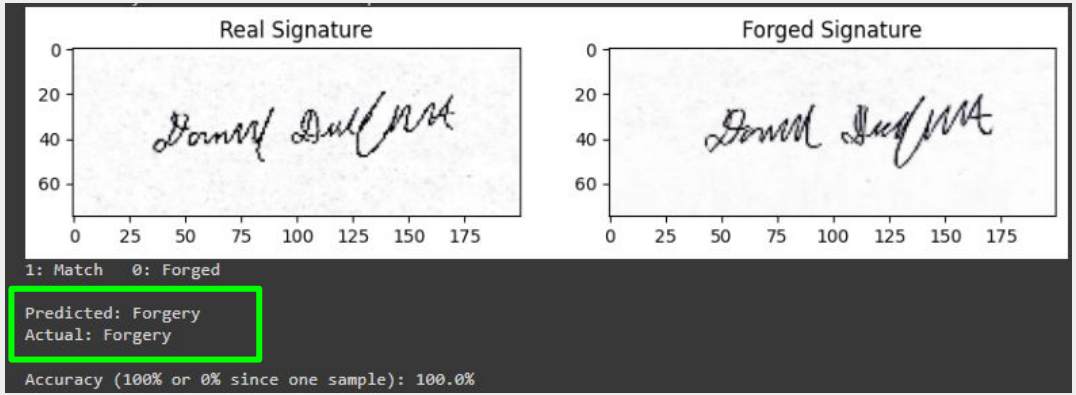


Results Obtained

Model Stats

- Training Accuracy: 99%
- Test Accuracy: 83%
- *pulled from results of a model of 50 epochs*
  - Training for longer -> validation loss suggested overfitting

Example Manual Test Sample (Unknown Identity)



Reasons for Test Drop Off

- Quality of data
- Number of Data Points