Final Project Outline

MATH 596

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327; 12020 H.E.

Introduction

- Introduce the problem of data rotting and resolution sharpening
- Introduce various examples of low-res images (old photos)

Data Overview

- Talk about the data required for this application
- Resolve around the quality of data needed for better results
- Introduce the datasets we are using
- Talk about data usage limitations

Design Implementation

- Talk about the convolution neural networks, how to design them
- Discussion on input-output vector sizes
- Talk about dividing data into training sets and validation sets
- Discovering ways to record error from the ground-truth

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Implementation

- Actual step-by-step implementation of the problem
- Include code snippets from Keras
- Introduce annoying issues with neural networks and fine-tuning
- More hardships encountered

Mathematical Basis

- More in-depth look into the system
- Talk about the math basis for the implemented layers
- Backpropagation techniques when using convolution

Results

- Show predictions for our test data
- Record the errors from the ground truth data

Conclusion

- Conclusion on the problems
- Areas for improvement
- Comparing to cutting-edge research