Cassava Disease Detection
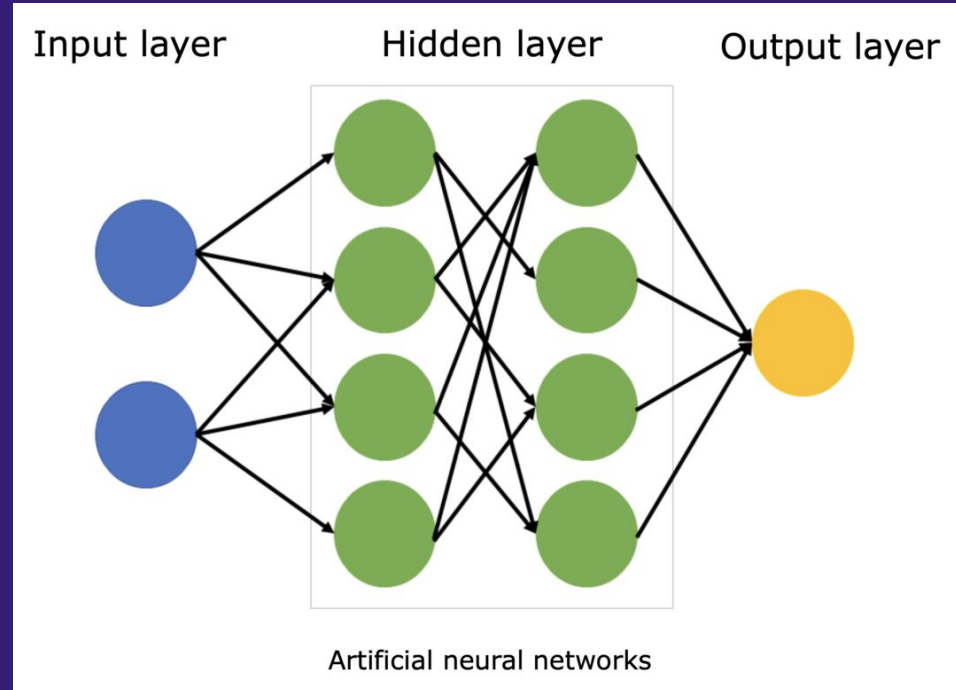
Using Neural Networks to Identify Diseased Plants

Lynn Anderson

Overview

- Cassava roots are an important source of nutrition

- Build a model to identify diseased plants

- Neural networks

Input layer Hidden layer Output layer

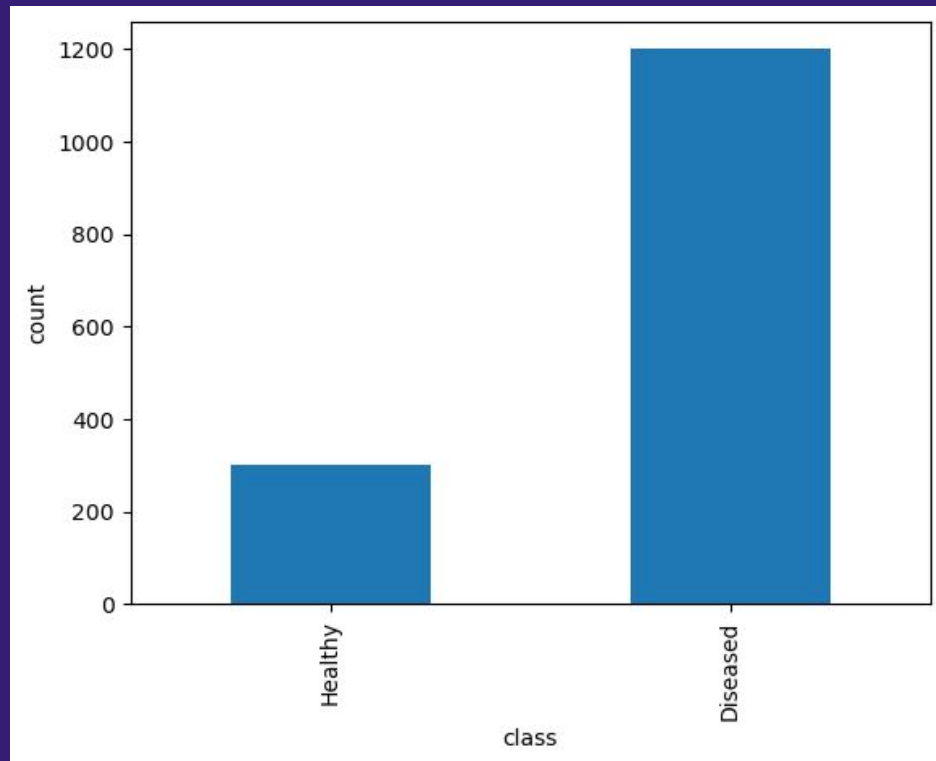Artificial neural networks

Business Understanding

- Automate disease identification

- Identify plants in need of treatment

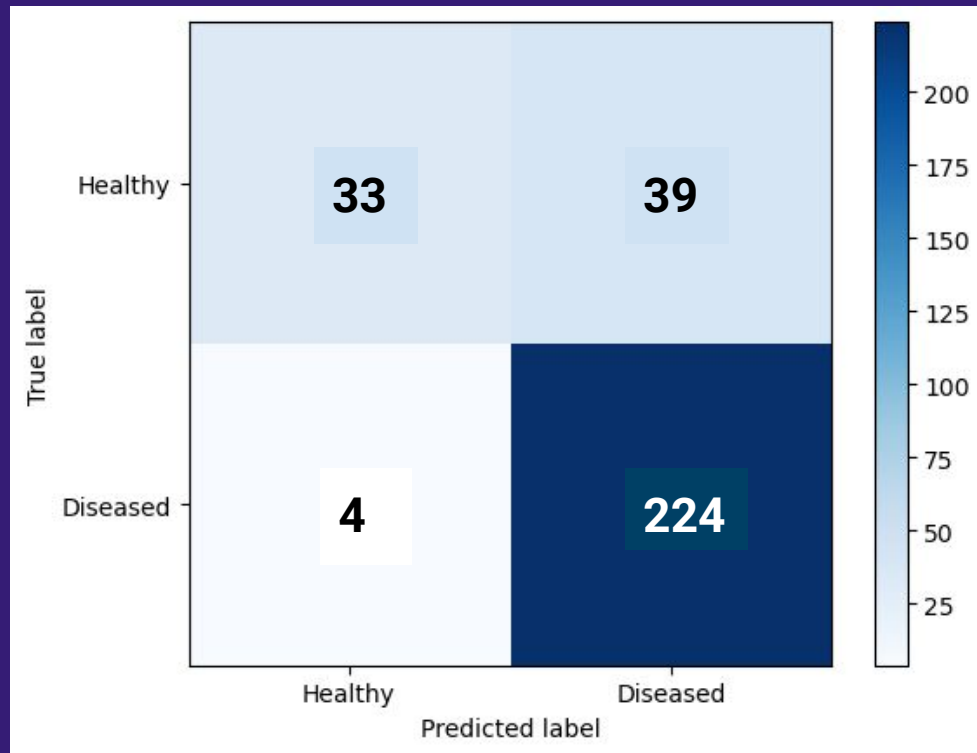- Minimize instances of incorrectly predicting as healthy

Data

- 1,500 images
  (20% healthy plants)
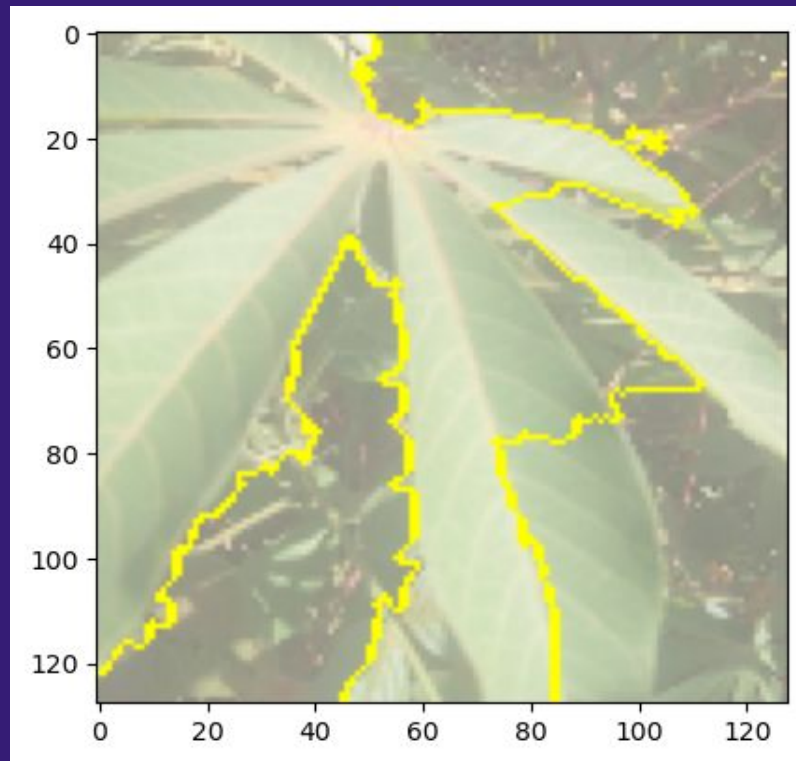
- Imbalanced

- 128 x 128 pixels

Modeling

- Many neural networks

- Pretrained Resnet performed best

Recommendations

- Start with pretrained Resnet model

- Focus on center of plant and large leaves

- Ensure proper image collection

Conclusions

- Resnet model was most reliable

- Still room for improvement

- Need for image consistency

Next Steps and Limitations

- Gather more labelled images of healthy plants

- More specific image standard

- Use more powerful machine

Thank You!

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