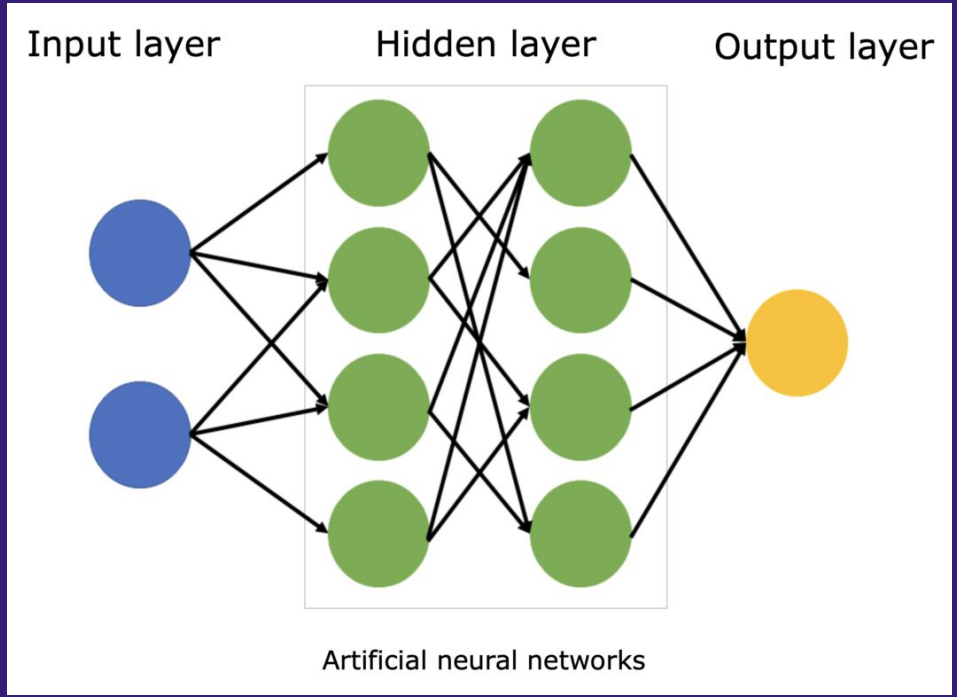
Cassava Disease Detection

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

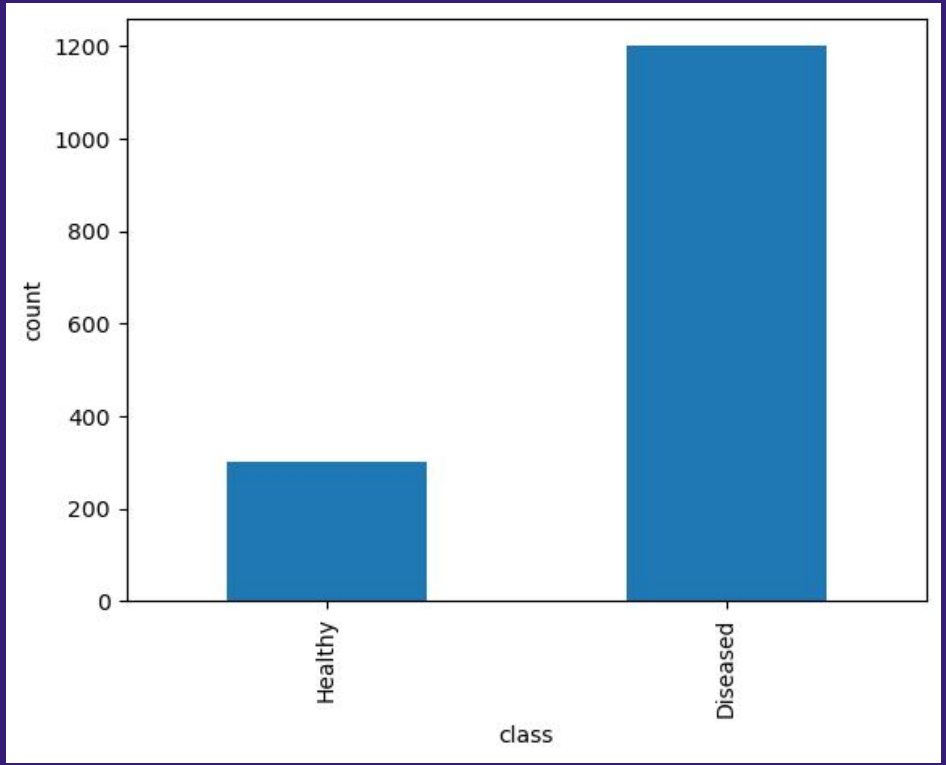


Business Understanding

- Automate disease identification
- Identify plants in need of treatment
- Minimize instances of incorrectly predicting as healthy

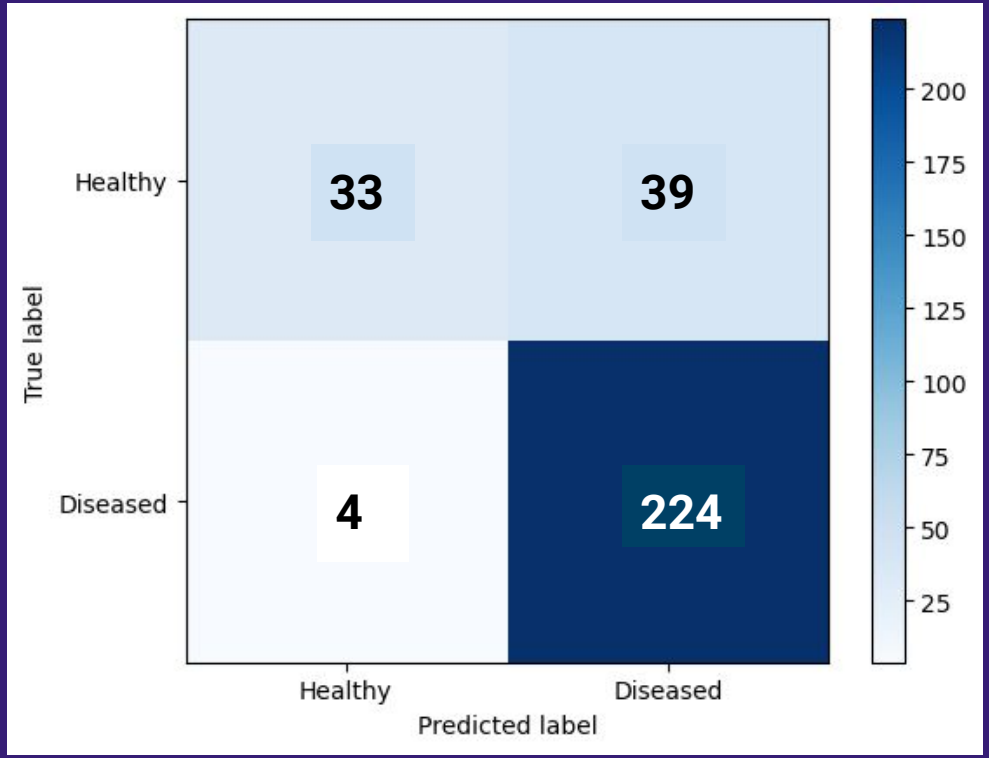
Data

- 1,500 images
  (20% healthy plants)
- Imbalanced
- 128 x 128 pixels



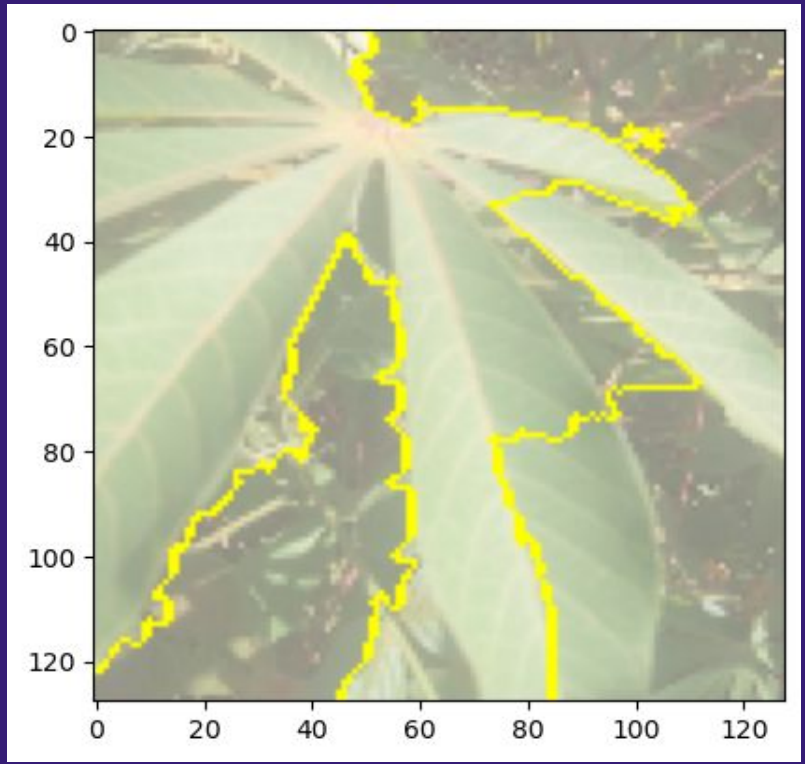
Modeling

- Many neural networks
- Pretrained Resnet performed best



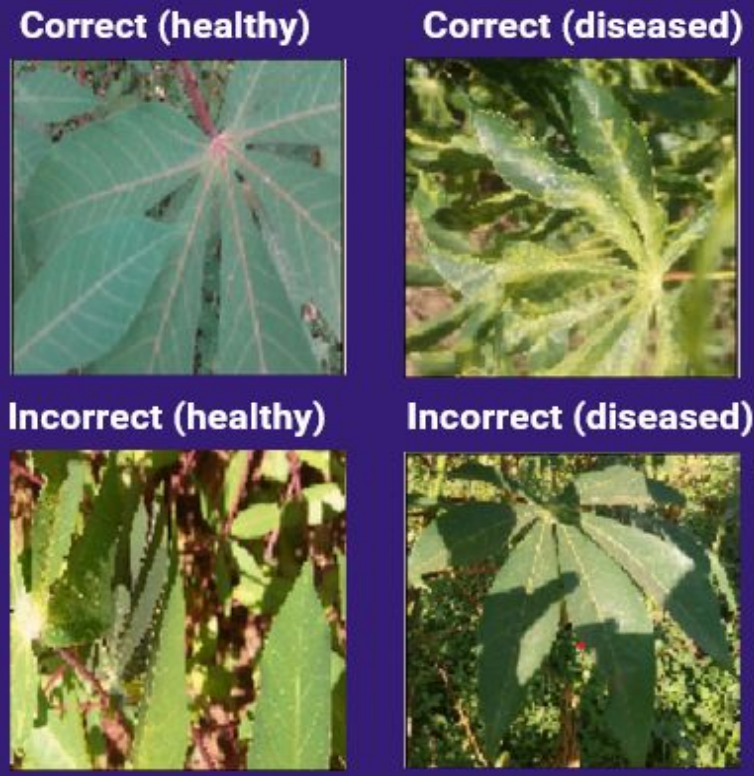
Recommendations

- Start with pretrained Resnet model
- Focus on center of plant and large leaves
- Ensure proper image collection



Conclusions

- Resnet model on smaller dataset most reliable
- Much room for improvement
- Need for image consistency



Next Steps and Limitations

- Gather more labelled images of healthy plants
- More specific image standard
- Investigate other pretrained models
- Use more powerful machine

Thank You!

Email: lalynjay@gmail.com
GitHub: @lalynjay
LinkedIn: linkedin.com/in/lauralynn-anderson/