

Diabetic Retinopathy Analysis

Michael Tsypin



Overview

- Improve current method for diabetic retinopathy diagnosis
- Create model that reads retinal images to determine diabetic retinopathy or not

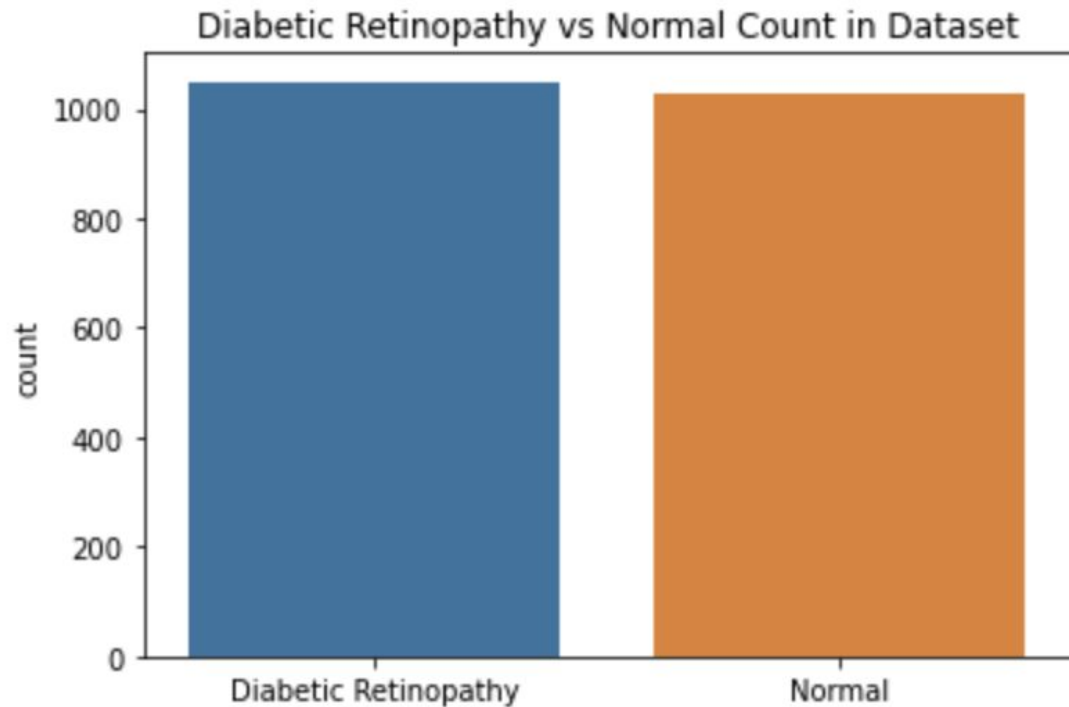
Outline

- Business Problem
- Modeling
- Evaluation
- Conclusion

Business Problem

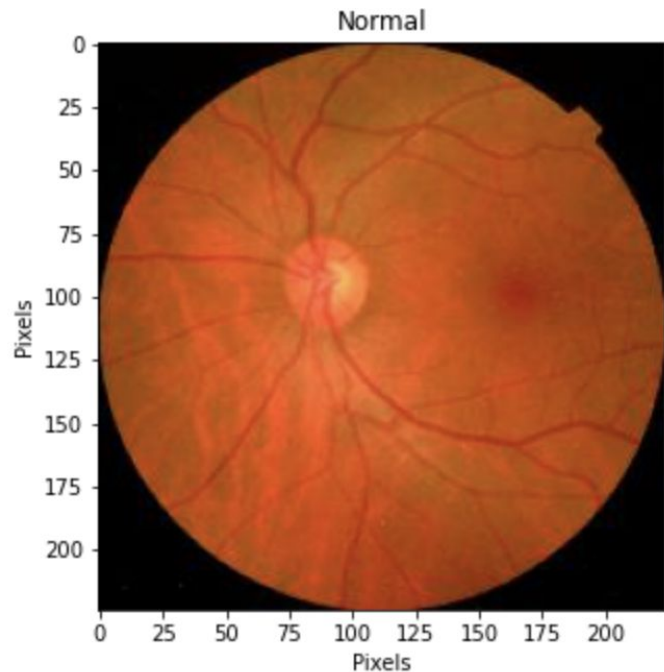
- Hospital wants to reduce time and error reviewing retinal images

Data

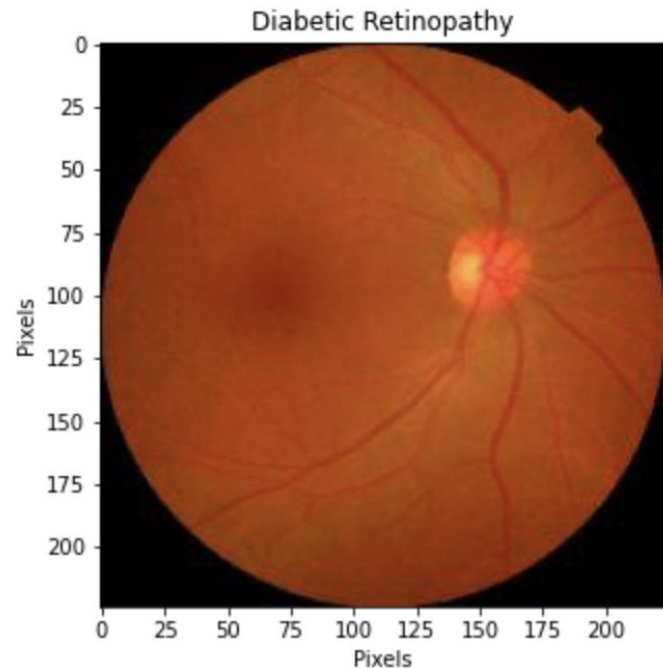


- Retinal images from Kaggle

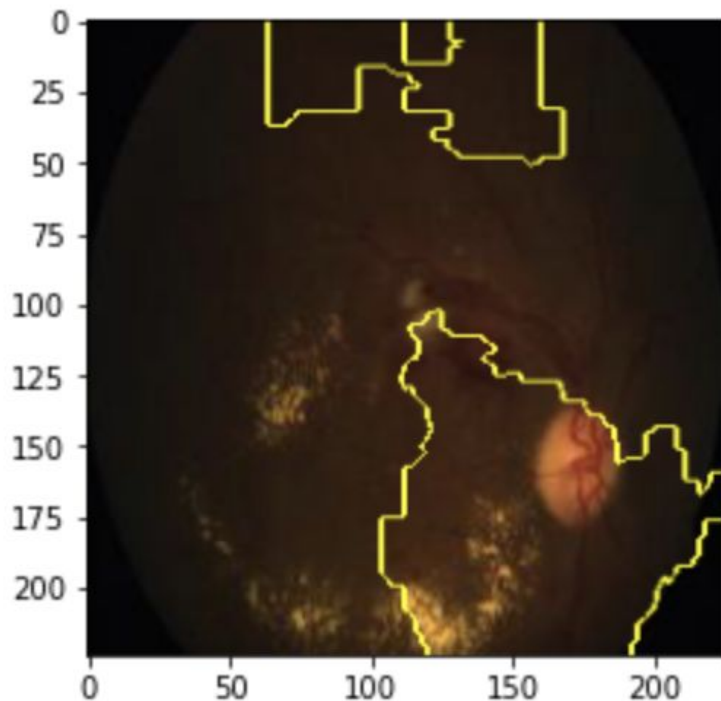
Modeling



- Iterating through deep learning networks

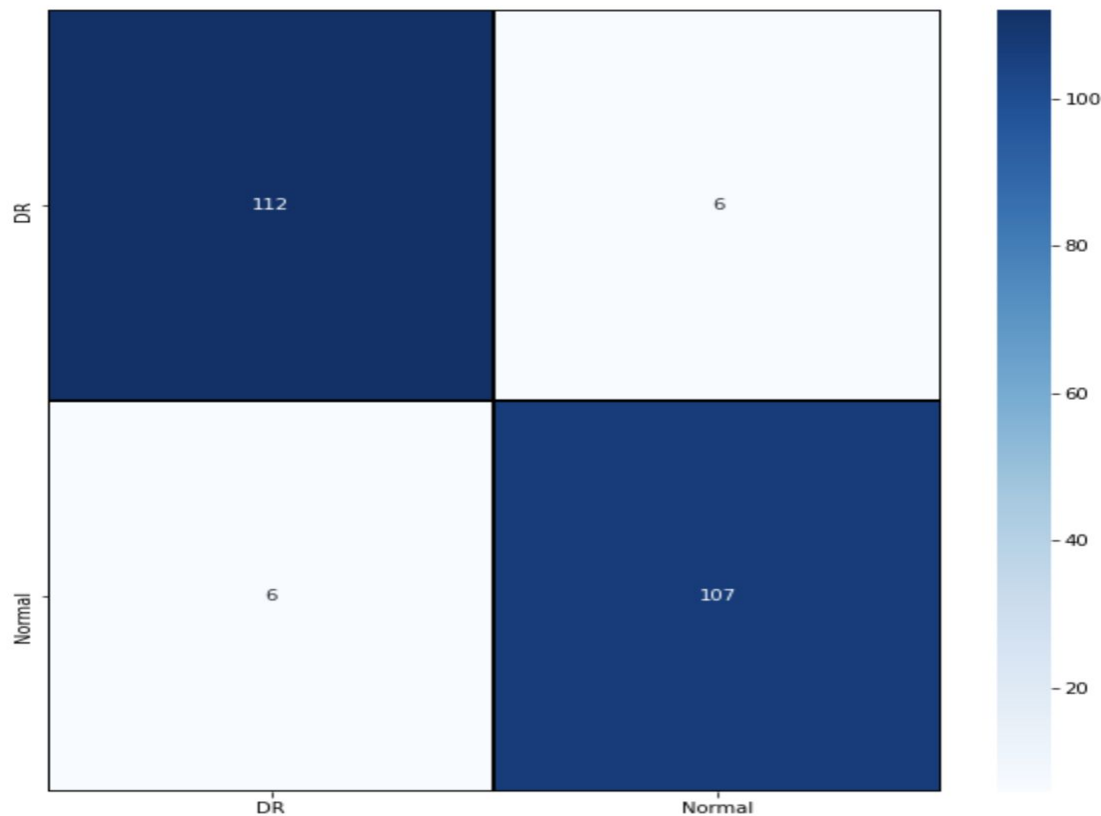


Evaluation



- VGG19 model with recall score of 95%
- Using LIME to aid diagnosis assistance

Evaluation



- False negatives most detrimental
- 6 false negatives

Conclusion

- Use VGG19 model
- Help ophthalmologist save time
- Use LIME to aid diagnosis assistance

Thank you!

Questions?

Email: mtsypin9@yahoo.com