

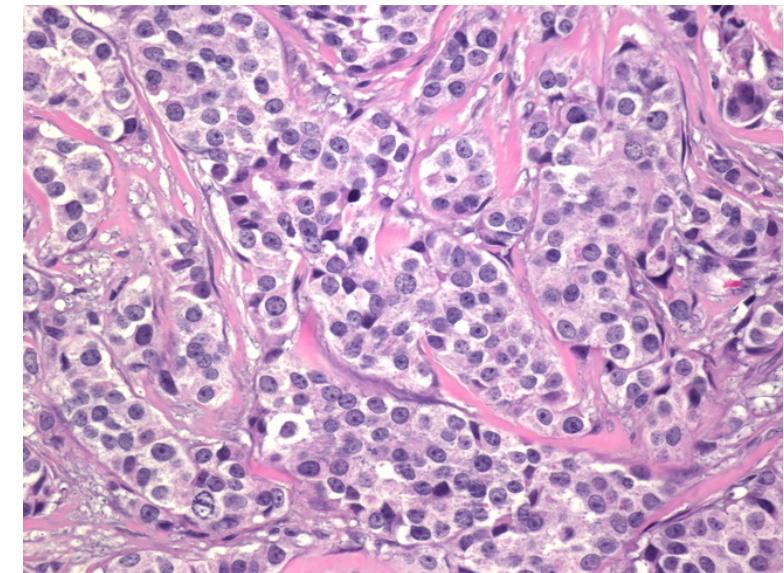


# Microscope Image Classification

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# Introduction

- Breast cancer: the most common type of cancer among women
- Diagnostic process:
  - X-ray
  - Ultrasound
  - Biopsy



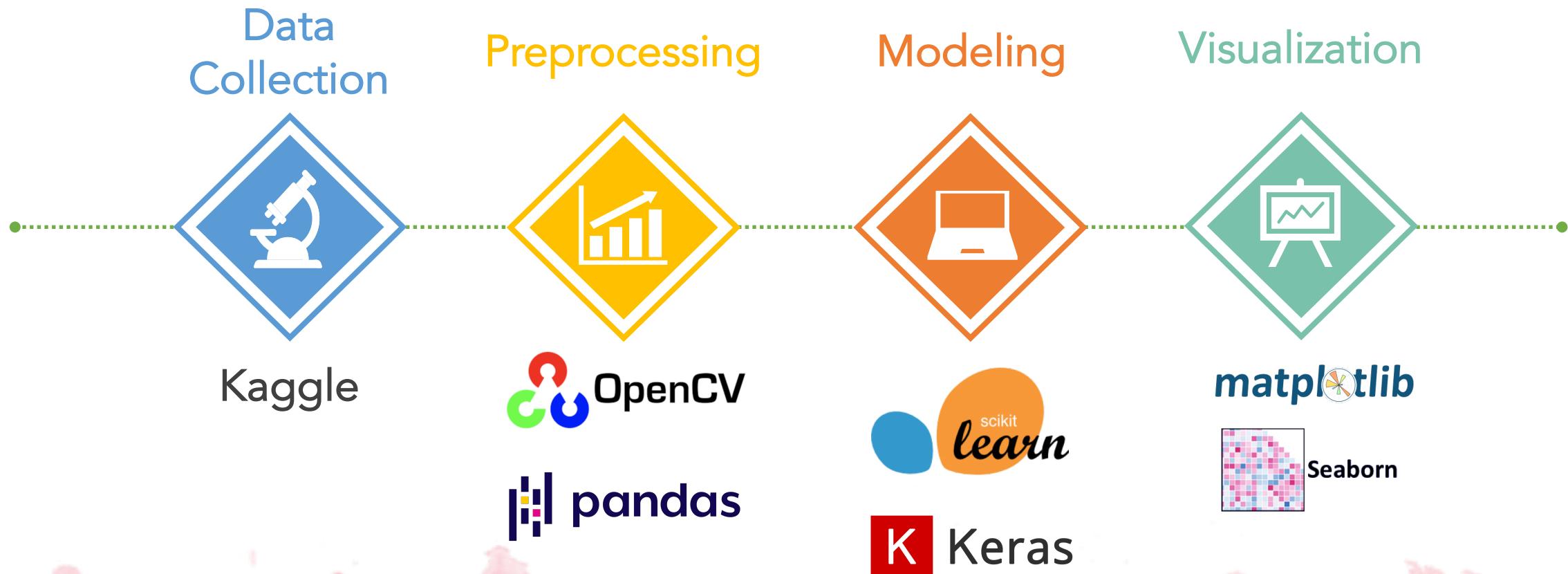
# Problems in Diagnostic Process

- Only trained pathologist can examine the patient samples.
- Time consuming, delay the treatment process

# What makes the model useful?

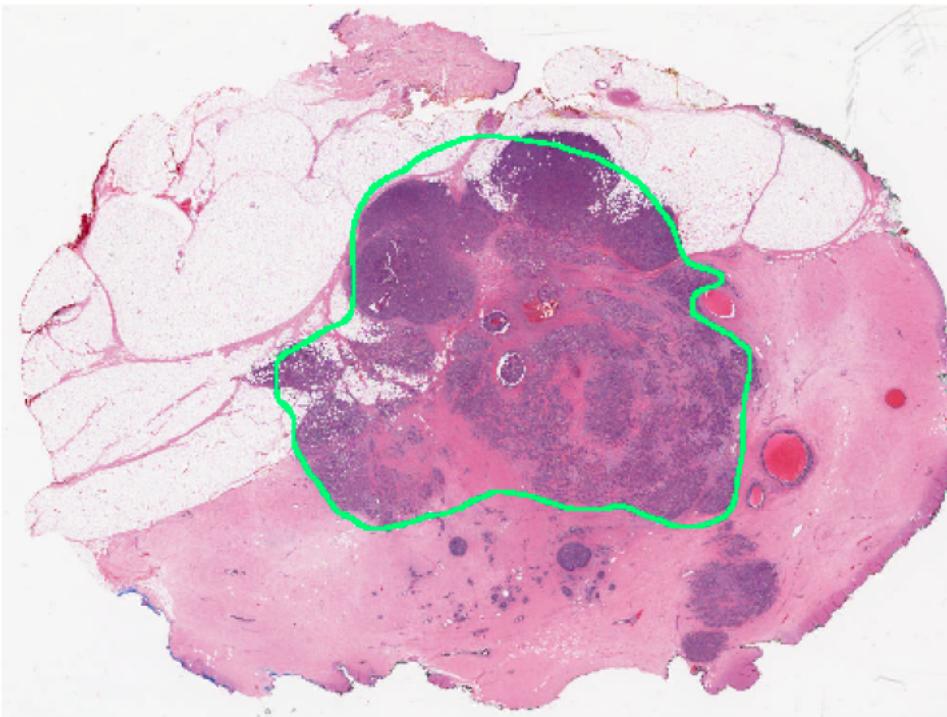
→ Helps fast diagnostic process

# Workflow

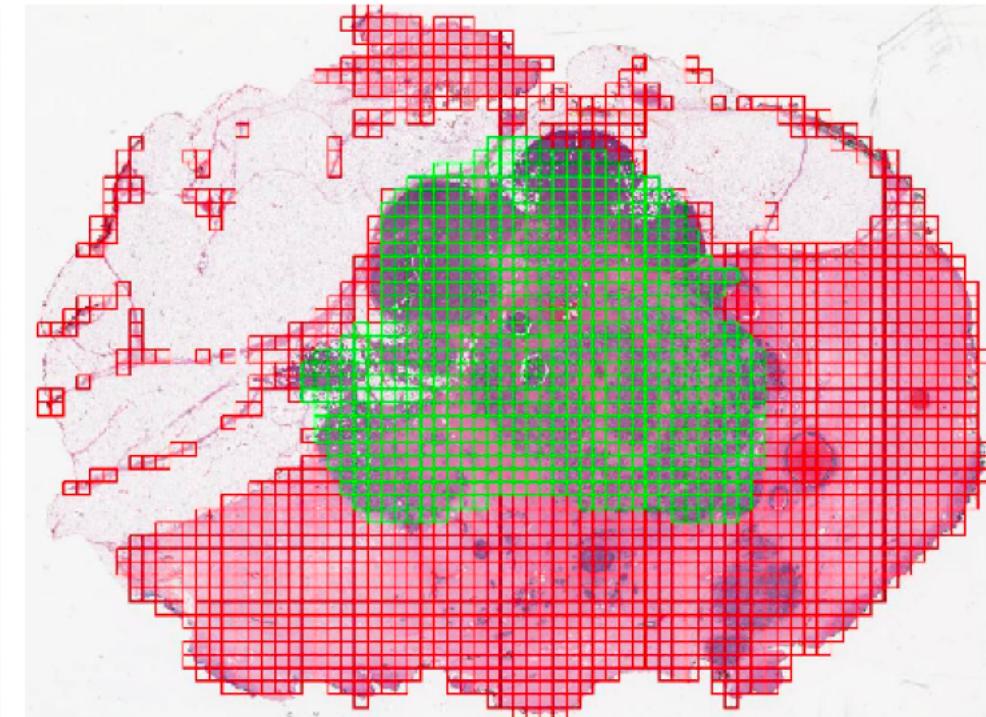


# Data

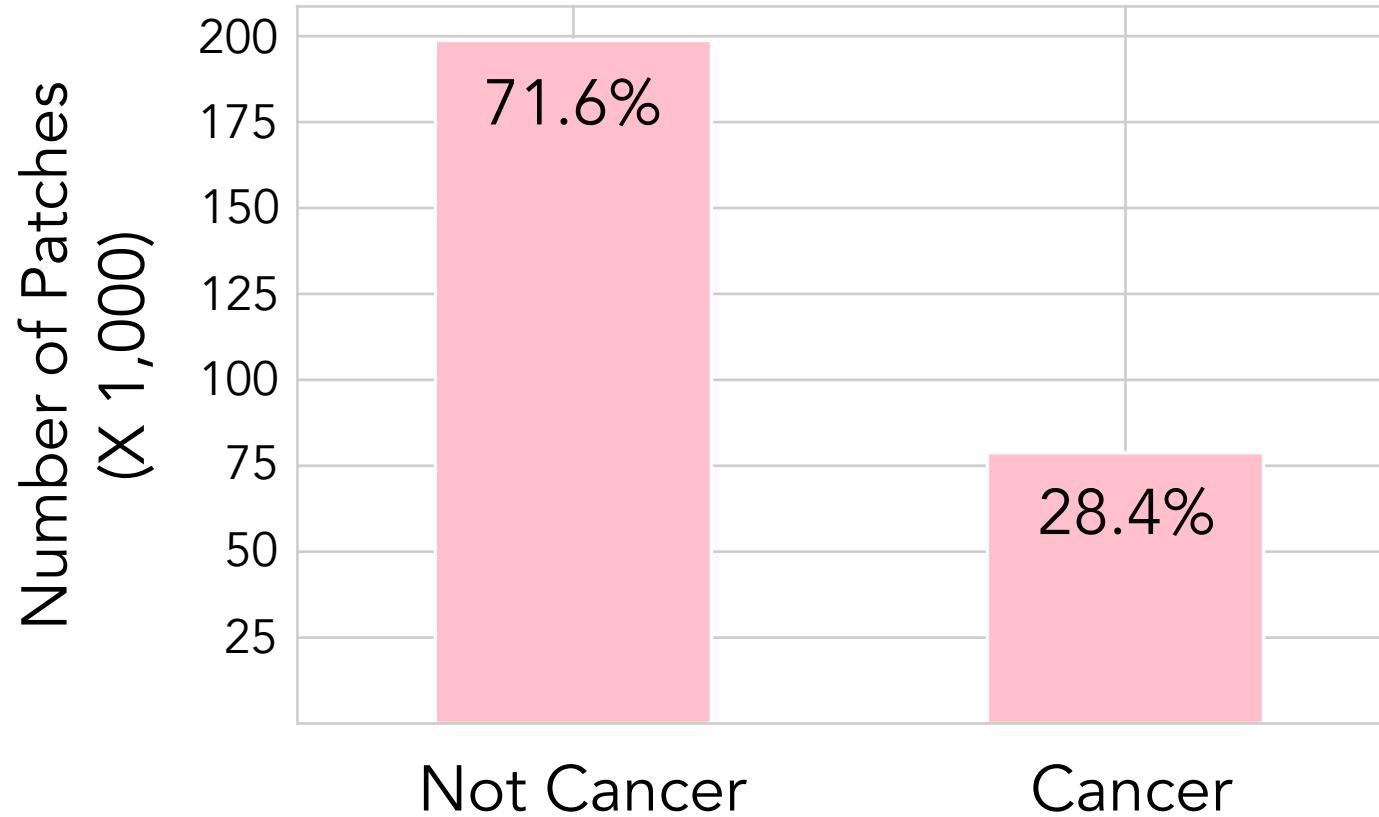
**Original WSI with pathologist annotation**



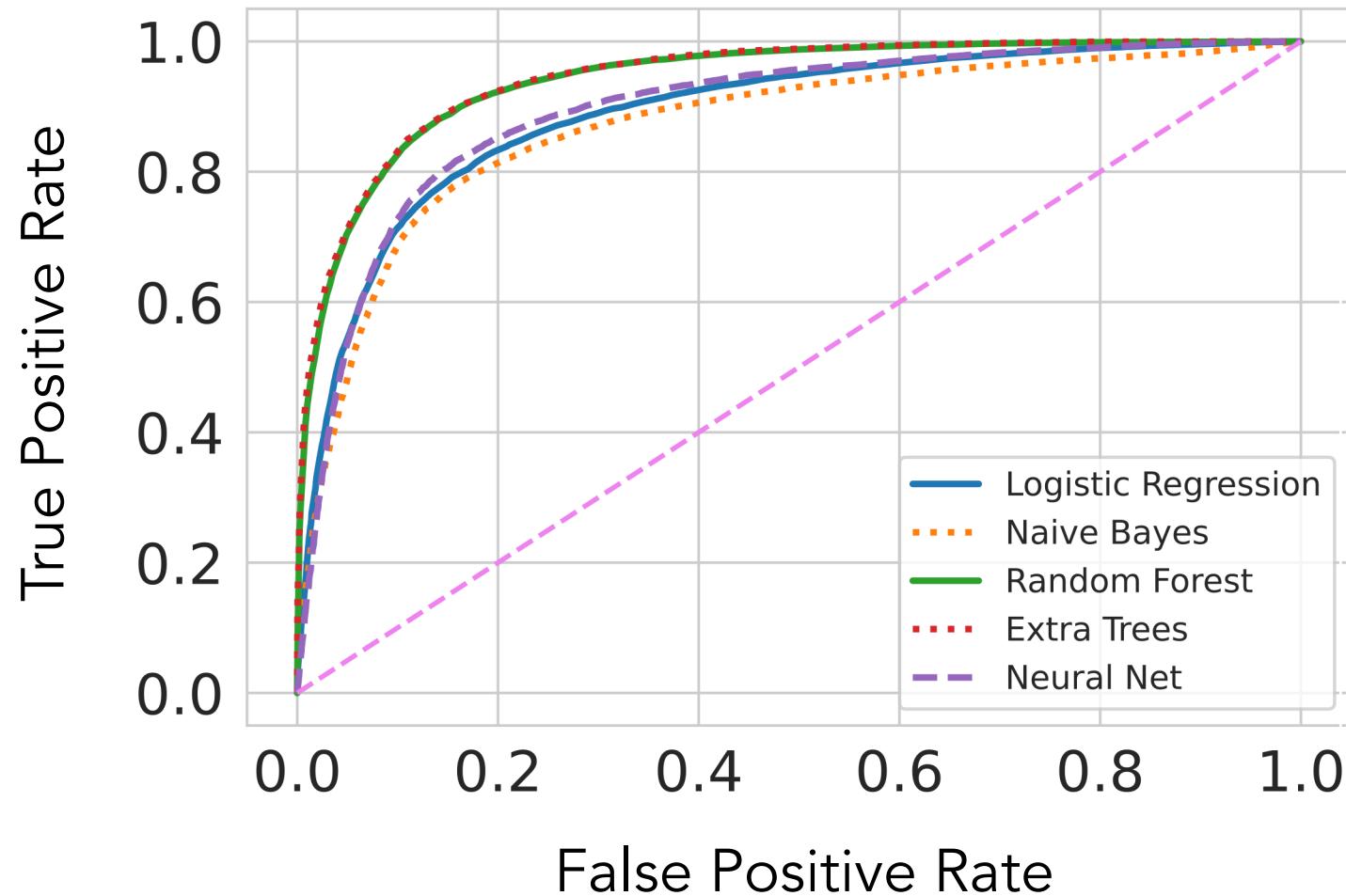
**Image patch sampling**



# Data



# Model Comparison



# Extra Trees Model

True Label

Not Cancer

Cancer

Not Cancer

Cancer

Predicted Label



ROC-AUC Score: 0.944

# Conclusions

- Machine learning model effective
- Recall score = 0.88

# Business Value and Future Works

- Build a web app:
  - Help doctors' diagnostic process
  - Provide fast treatment to patients
  - Reduce diagnostic errors
- Build models for different cancer types



Thank you!

Questions?