

The background features abstract, hand-drawn style elements. In the top left, there are pink and orange circular shapes. In the top right, a blue shape is partially visible. On the right side, there are blue and yellow shapes with jagged, irregular outlines. At the bottom, there are yellow and orange shapes, including a yellow shape resembling a bone or a long, thin object on the left, and a yellow shape with a blue outline on the right.

# **Advancing Cancer**

## **Diagnosis:** AI-Enhanced Metastatic Histopathology Detection

# Background and Expertise



**Data Scientist**



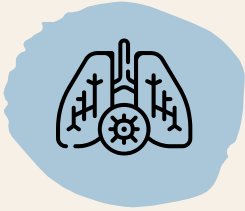
**Biotechnology  
Background**



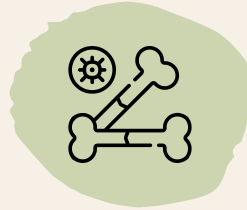
# Project Overview



# Business Understanding



**Early Detection**



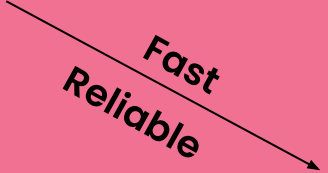
**Automation**



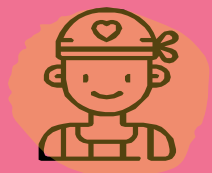
**Fast Results**



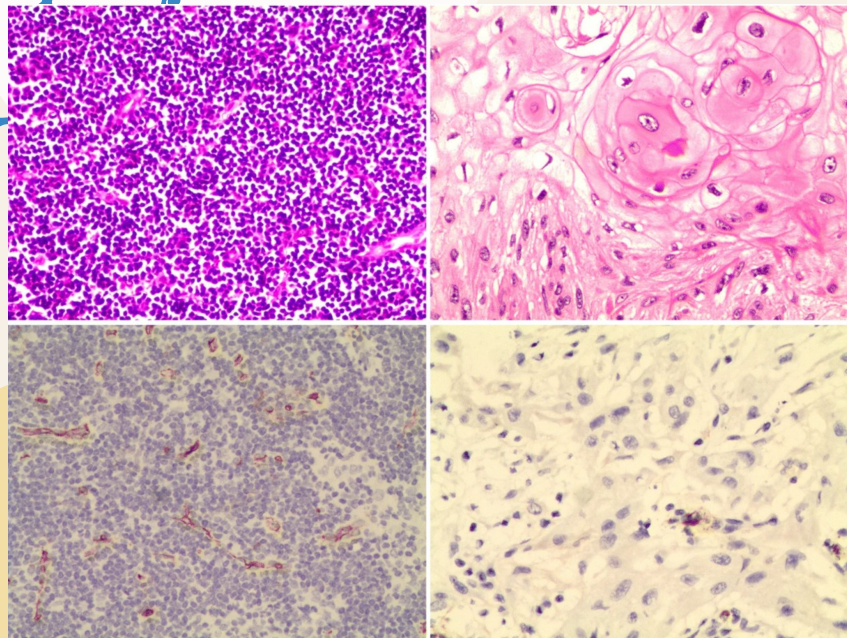
Sample



Diagnosis



**Diagnosis  
Process**



Non-metastatic nodes

Metastatic nodes

# Data Understanding and Analysis

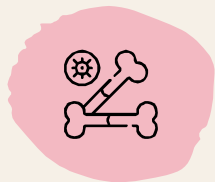
Over 300.000 Images

1:1 Ratio Metastatic/Normal

# How AI Analyzes Cancer Images



**CNNs**



**Patterns**



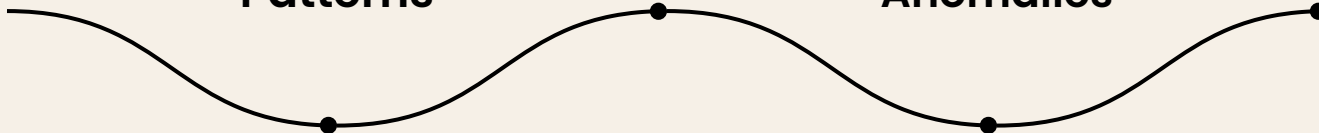
**Textures**



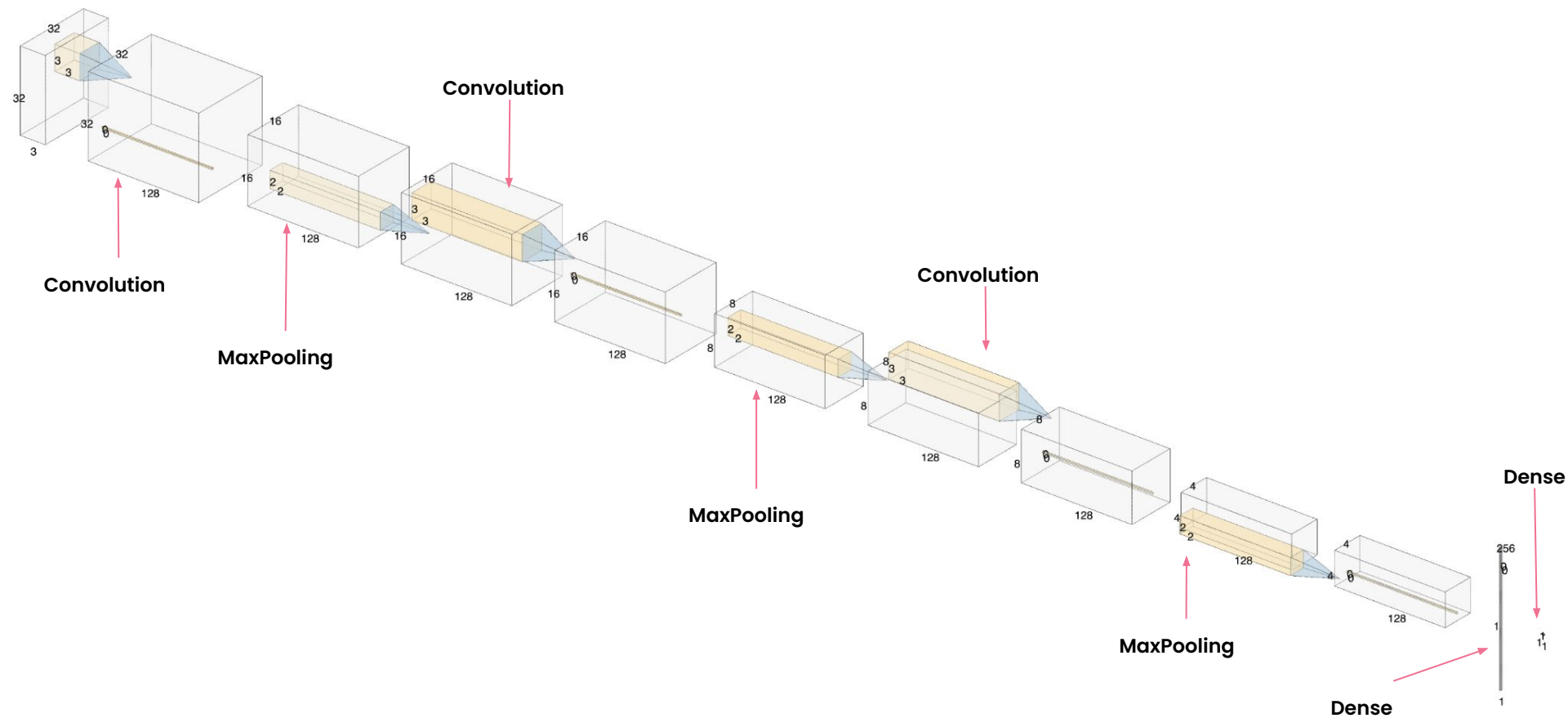
**Anomalies**



**Diagnostic**



# Model Architecture







# Model Performance and Metric of Choice

85% Recall Score

85% Precise

**Correct prediction**

**85%**

**Incorrect Metastasis  
Prediction**

**9%**

**Incorrect Normal  
Prediction**

**6%**

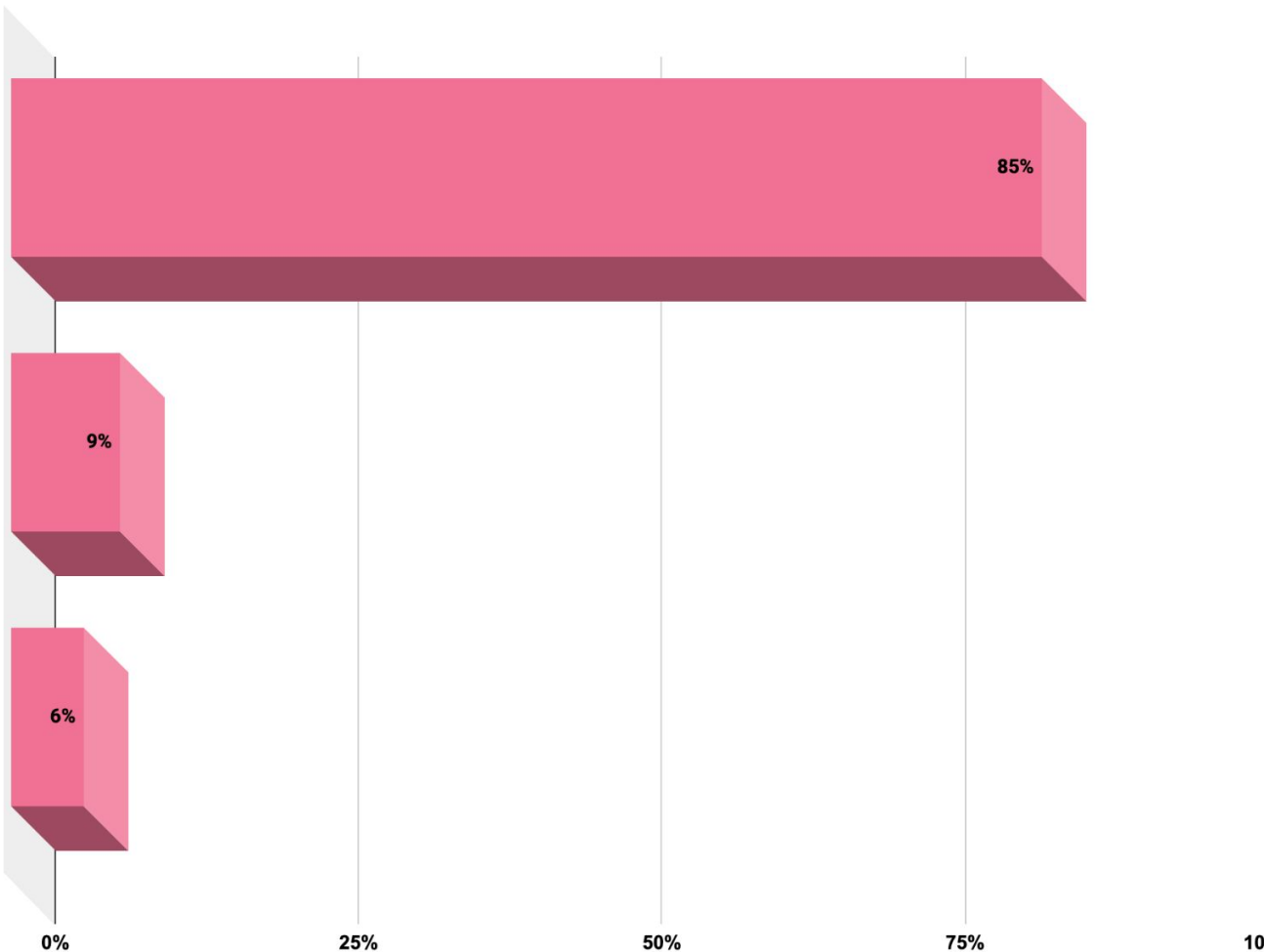
**0%**

**25%**

**50%**

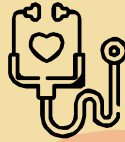
**75%**

**100%**



# Conclusion and Recommendations

**85% Recall**



**Continuous Monitoring**

**Accurate Diagnosis**



**Feedback Loop**

**22,500  
Accurate  
Predictions**



# Future Directions

**01**

**Data Expansion**

**04**

**Deployment**

**03**

**Clinical Trials**

**02**

**Transfer Learning**

**05**

**Hyperparameter  
Refinement**



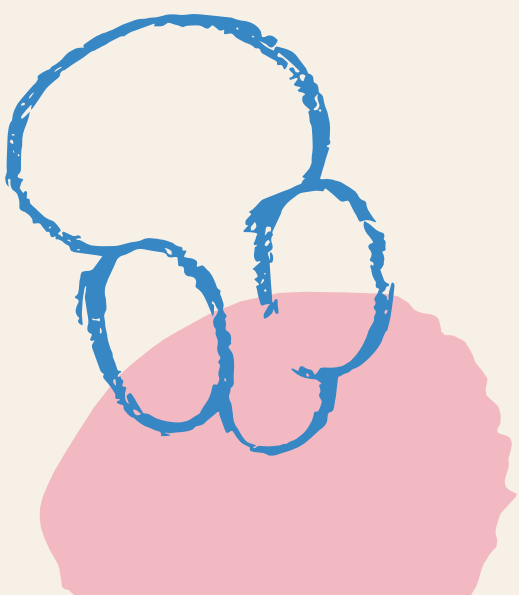
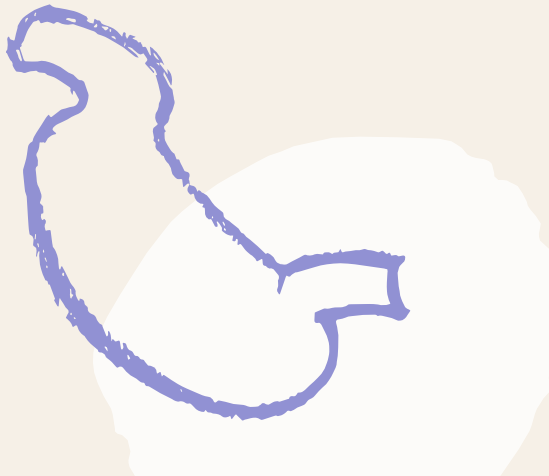
# Thank You!

**Do you have any questions?**

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