

MEDICAL SPECIALTY



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AGENDA

- Data
 - Methods
 - Motivation
 - Classifier
- Classification Report
 - Top Words
 - Conclusion
 - Get in Touch

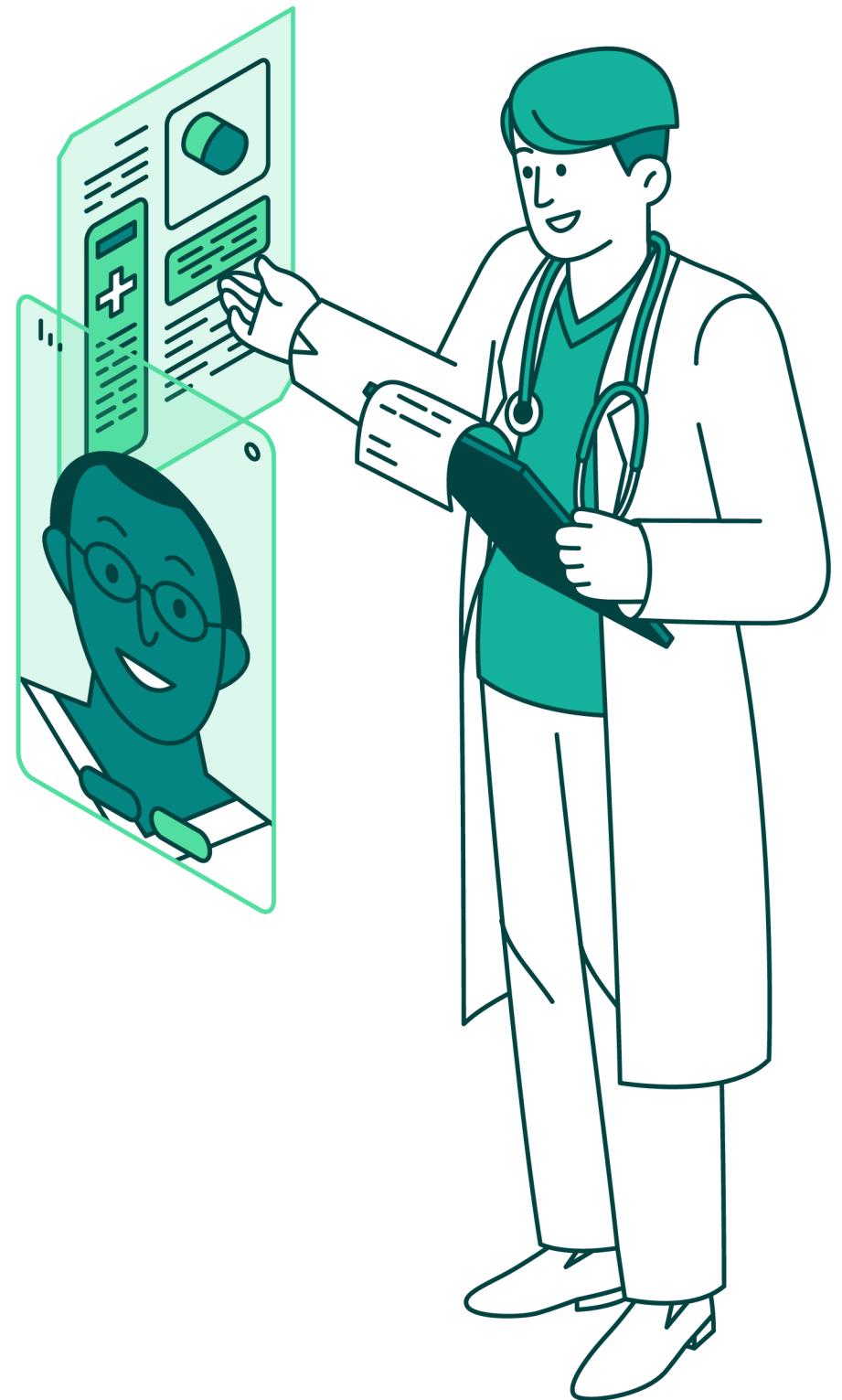


BUSINESS PROBLEM

Determine the medical specialty of a patient given their medical transcript

MOTIVATION

Given the overwhelming amount of patient documentation, I'm looking for a more efficient way to determine their specialty.





DATA

MTASAMPLES

Created by **Tara Boyle**

Analytics Engineer

Pharmacist



METHODS

spaCy

Can be applied to medical sentiment analysis and entity extraction

TF-IDF

Fast performance, word importance in document



CHALLENGES

- Limited Data
- Improper Documentation



CLASSIFIER



ComplementNB

- Accuracy: 92%

Steps

- Pre - process
- Train – Test
- Classifier
- Hypertune
- Word Cloud



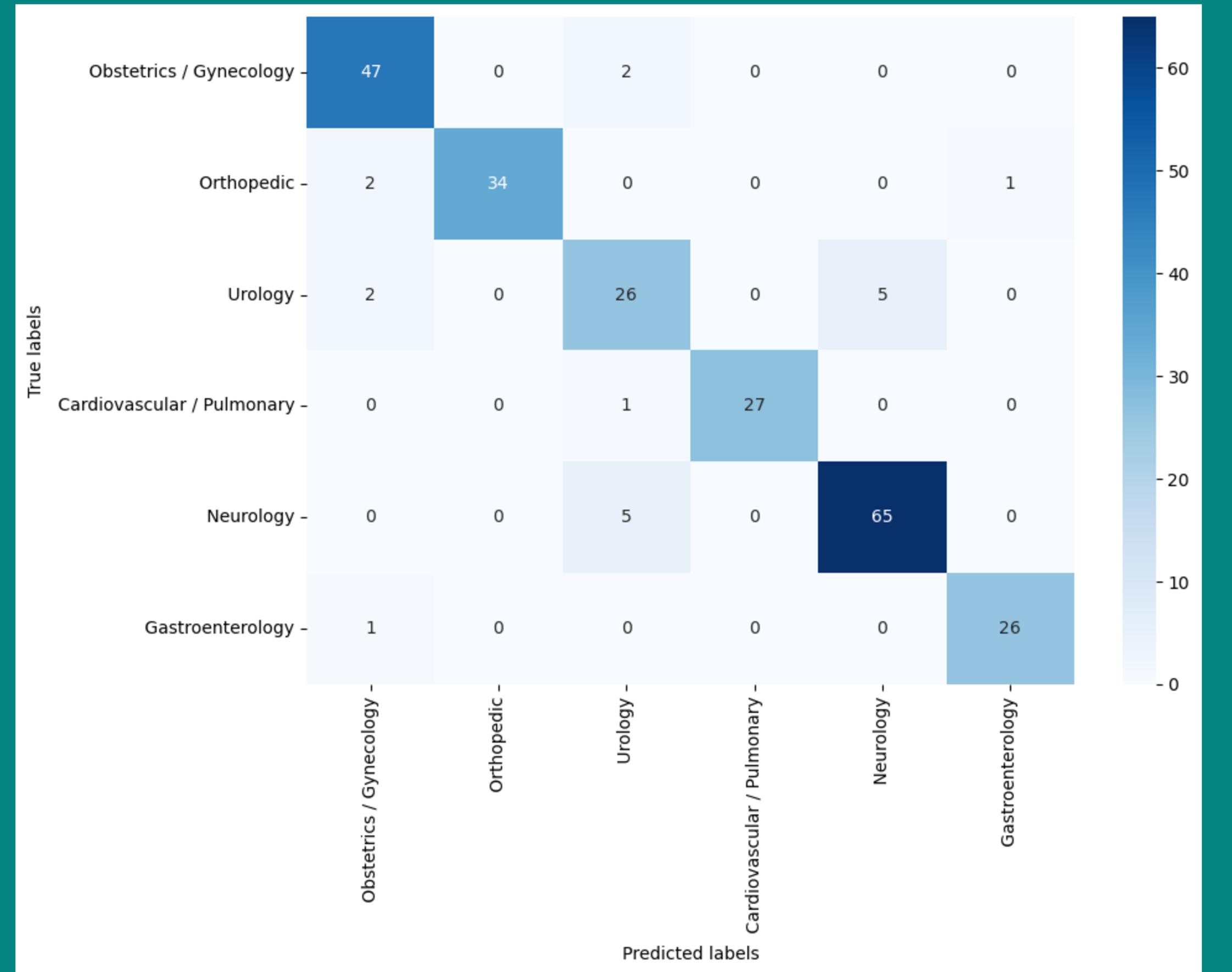
CLASSIFICATION REPORT



	precision	recall	f1-score	support
Cardiovascular / Pulmonary	0.90	0.96	0.93	49
Gastroenterology	1.00	0.92	0.96	37
Neurology	0.76	0.79	0.78	33
Obstetrics / Gynecology	1.00	0.96	0.98	28
Orthopedic	0.93	0.93	0.93	70
Urology	0.96	0.96	0.96	27
accuracy			0.92	244
macro avg	0.93	0.92	0.92	244
weighted avg	0.92	0.92	0.92	244



CONFUSION MATRIX



TOP WORDS

Cardiovascular

- Artery
- Coronary
- Chest
- Heart

Neurology

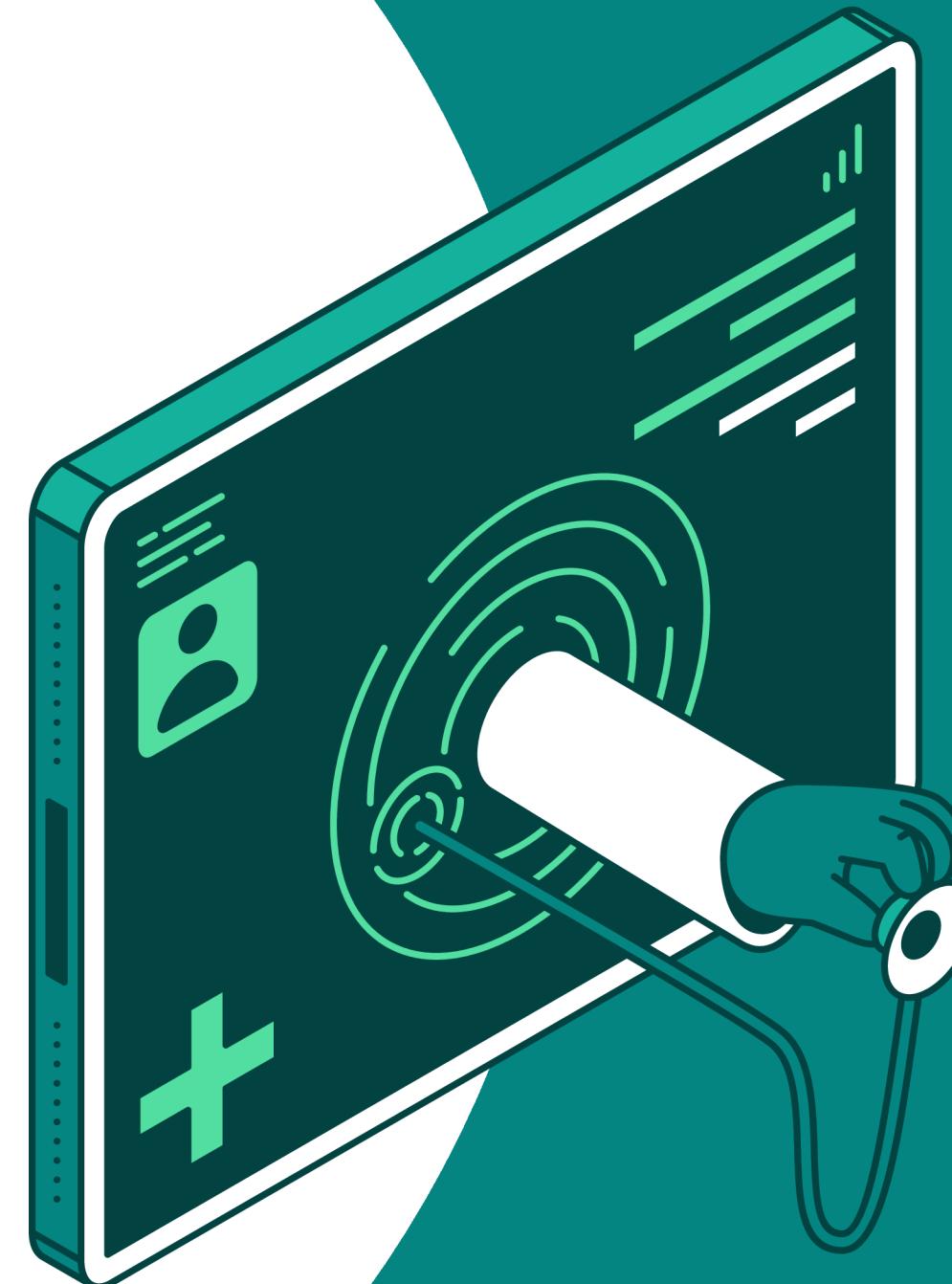
- Brain
- MRI
- Right / Left
- Tumor

Gastroenterology

- Colon
- Gall Bladder
- Stomach
- Esophagus

Obstetrics / Gynecology

- Uterus
- Uterine
- Cervix
- Delivery



CONCLUSION



- Obtain more data
- Find better way to clean data
- Factor in Patient History
- Show specific specialties per patient

GET IN TOUCH

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