

# Named Entity Recognition in the Medical Domain

Student: Kusalavan Kirubhaharini

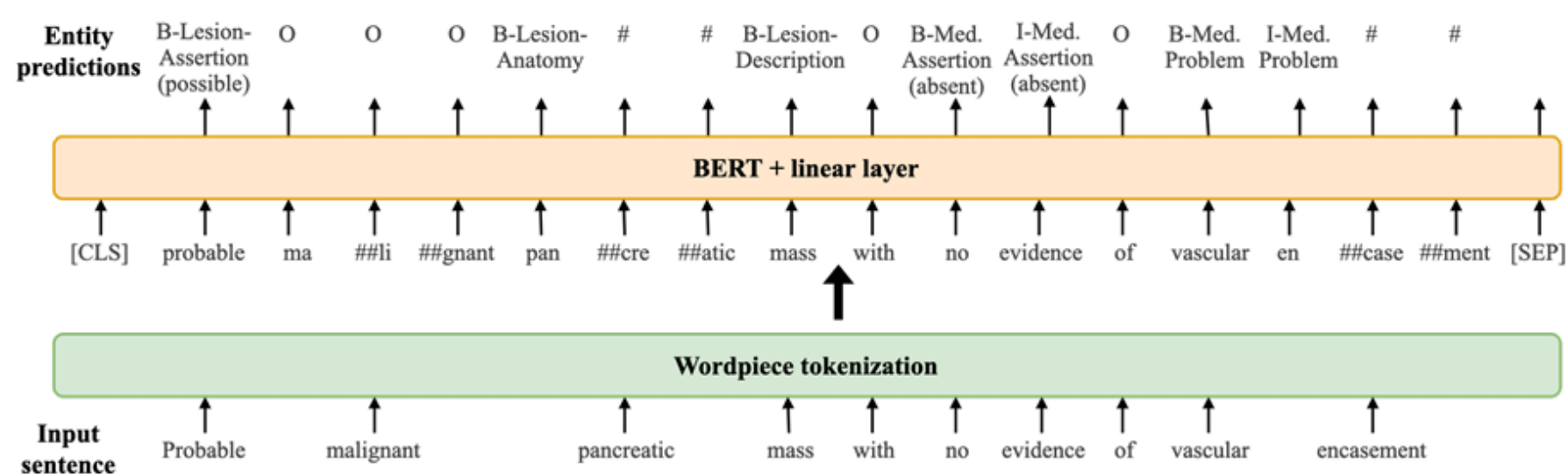
Supervisor: A/P Chng Eng Siong

## Original Data

This was thought to be a psoriatic arthritis flare, so his prednisone was increased from his home dose of 30mg to 60mg daily with improvement in his inflammation.

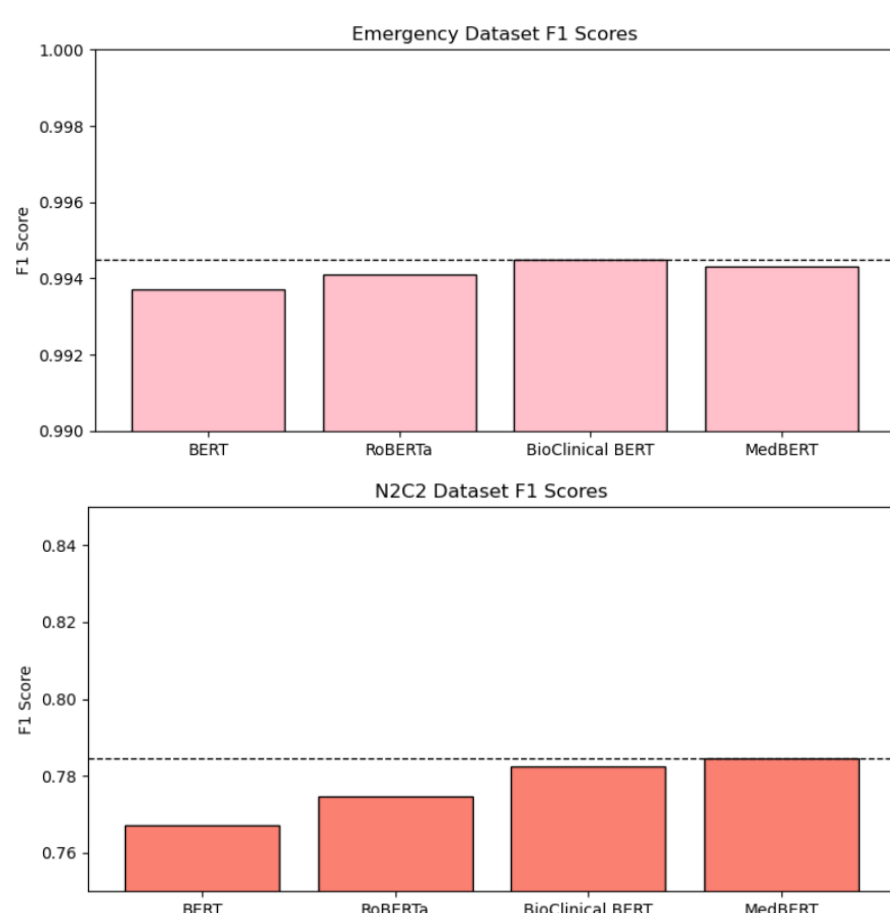
## Result of Data

This was thought to be a psoriatic arthritis flare , so his prednisone  
**Drug** was increased from his home dose of **30mg Strength** to  
**60mg Strength** **daily Frequency** with improvement in his  
**inflammation Reason** .



## Project Objectives

The project aims to reduce the workload on medical professionals, such as emergency first responders and doctors, by automating part of their workflow. Two Named Entity Recognition (NER) models were developed using BERT-based models for emergency and clinical (N2C2) datasets respectively that automatically identify entities such as the drug administered to the patient. An application was created using Flask to display useful information to the end-users. The project also focused on training and deploying models using corpora from the general English domain and applying the knowledge to the medical domain. Four different models were explored for the medical datasets, including BERT, RoBERTa, BioClinical BERT and MedBERT.



## Results

The emergency dataset performed best with BioClinical BERT, attaining a macro F1 score of 0.9945, while MedBERT scored the highest macro F1 score of 0.7845 on the N2C2 dataset. These findings indicate that these models are highly suitable for recognizing entities in their corresponding domains, and could assist in streamlining the workflow of healthcare professionals.