Part 2

EvalScript Results

EN dataset:

#Entity in gold data: 226

#Entity in prediction: 981

#Correct Entity : 149

Entity precision: 0.1519

Entity recall: 0.6593

Entity F: 0.2469

#Correct Sentiment : 58

Sentiment precision: 0.0591

Sentiment recall: 0.2566

Sentiment F: 0.0961

CN dataset:

#Entity in gold data: 362

#Entity in prediction: 2608

#Correct Entity : 146

Entity precision: 0.0560

Entity recall: 0.4033

Entity F: 0.0983

#Correct Sentiment : 56

Sentiment precision: 0.0215

Sentiment recall: 0.1547

Sentiment F: 0.0377

FR dataset:

#Entity in gold data: 223

#Entity in prediction: 964

#Correct Entity : 176

Entity precision: 0.1826

Entity recall: 0.7892

Entity F: 0.2965

#Correct Sentiment : 65

Sentiment precision: 0.0674

Sentiment recall: 0.2915

Sentiment F: 0.1095

SG dataset:

#Entity in gold data: 1382

#Entity in prediction: 5112

#Correct Entity : 644

Entity precision: 0.1260

Entity recall: 0.4660

Entity F: 0.1983

#Correct Sentiment : 283

Sentiment precision: 0.0554

Sentiment recall: 0.2048

Sentiment F: 0.0872

Part 3

EvalScript Results

EN Dataset:

#Entity in gold data: 226

#Entity in prediction: 162

#Correct Entity : 104

Entity precision: 0.6420

Entity recall: 0.4602

Entity F: 0.5361

#Correct Sentiment : 64

Sentiment precision: 0.3951

Sentiment recall: 0.2832

Sentiment F: 0.3299

CN Dataset:

#Entity in gold data: 362

#Entity in prediction: 158

#Correct Entity : 64

Entity precision: 0.4051

Entity recall: 0.1768

Entity F: 0.2462

#Correct Sentiment : 47

Sentiment precision: 0.2975

Sentiment recall: 0.1298

Sentiment F: 0.1808

FR Dataset:

#Entity in gold data: 223

#Entity in prediction: 166

#Correct Entity : 112

Entity precision: 0.6747

Entity recall: 0.5022

Entity F: 0.5758

#Correct Sentiment : 72

Sentiment precision: 0.4337

Sentiment recall: 0.3229

Sentiment F: 0.3702

SG Dataset:

#Entity in gold data: 1382

#Entity in prediction: 723

#Correct Entity : 386

Entity precision: 0.5339

Entity recall: 0.2793

Entity F: 0.3667

#Correct Sentiment : 244

Sentiment precision: 0.3375

Sentiment recall: 0.1766

Sentiment F: 0.2318

Part 4

EvalScript Results

EN Dataset:

#Entity in gold data: 226

#Entity in prediction: 159

#Correct Entity : 83

Entity precision: 0.5220

Entity recall: 0.3673

Entity F: 0.4312

#Correct Sentiment : 53

Sentiment precision: 0.3333

Sentiment recall: 0.2345

Sentiment F: 0.2753

FR Dataset:

#Entity in gold data: 223

#Entity in prediction: 80

#Correct Entity : 41

Entity precision: 0.5125

Entity recall: 0.1839

Entity F: 0.2706

#Correct Sentiment : 25

Sentiment precision: 0.3125

Sentiment recall: 0.1121

Sentiment F: 0.1650

Part 5

For part 5, we implemented 2 different types of algorithms.

The first is found under ess\_p5.py, which is the “Entity-Sentiment-Separation” Algorithm. This basically does Viterbi twice in succession, however the first run only analyses the Entities, and the second run only analyses the Sentiments. After both are run, we combine the results of both runs of Viterbi to determine whether or not a sentence has those entities and sentiments.

For each sentence, we get a state sequence output just for entities and another state sequence output just for sentiments. Then we iterate over the sentence index and the 2 state different sequence outputs. If at a given index, the entity label is not ‘O’, we check if the sentiment label is also not ‘O’. If both these conditions are satisfied then we merge the results of both sequence outputs to give us our final label for that given index. If the entity label is not ‘O’, but the sentiment label is ‘O’, then we just assume that the label at that index Is ‘O’.