**Date 12/6 FULL dataset Approach 3:**

(base) xingyuchen@XingyudeMacBook-Pro-2 NLPSharedTask4 % docker run --rm -it --init $GPUS \

--volume "$PWD/data:/data" \

--volume "$PWD/models:/models" \

--volume "$PWD:/output" \

ghcr.io/webis-de/acl22-value-classification:$TAG \

python predict.py --classifier bos --levels "2"

===> Bert: Predicting Level 2...

Parameter 'function'=<function convert\_to\_dataset.<locals>.<lambda> at 0x7f98fc5b33a0> of the transform datasets.arrow\_dataset.Dataset.\_map\_single couldn't be hashed properly, a random hash was used instead. Make sure your transforms and parameters are serializable with pickle or dill for the dataset fingerprinting and caching to work. If you reuse this transform, the caching mechanism will consider it to be different from the previous calls and recompute everything. This warning is only showed once. Subsequent hashing failures won't be showed.

100%|████████████████████████████████████| 5393/5393 [00:00<00:00, 12798.80ex/s]

100%|████████████████████████████████████| 5393/5393 [00:00<00:00, 10047.75ex/s]

100%|█████████████████████████████████████████████| 6/6 [00:01<00:00, 5.49ba/s]

100%|█████████████████████████████████████████████| 6/6 [00:00<00:00, 10.31ba/s]

\*\*\*\*\* Running Prediction \*\*\*\*\*

Num examples = 5393

Batch size = 8  
100%|█████████████████████████████████████████| 675/675 [06:41<00:00, 1.68it/s]

===> SVM: Predicting Level 2...

===> 1-Baseline: Predicting Level 2...

===> Writing predictions...

(base) xingyuchen@XingyudeMacBook-Pro-2 NLPSharedTask4 % Rscript src/R/Evaluation.R --data-dir data/ --predictions predictions.tsv

===> Loading files...

===> Evaluating predictions...

Method Label Precision Recall F1 Accuracy

1-Baseline Self-direction: thought 0.18 1 0.31 0.18

1-Baseline Self-direction: action 0.26 1 0.41 0.26

1-Baseline Stimulation 0.05 1 0.09 0.05

1-Baseline Hedonism 0.03 1 0.06 0.03

1-Baseline Achievement 0.28 1 0.44 0.28

1-Baseline Power: dominance 0.11 1 0.2 0.11

1-Baseline Power: resources 0.12 1 0.21 0.12

1-Baseline Face 0.07 1 0.13 0.07

1-Baseline Security: personal 0.37 1 0.54 0.37

1-Baseline Security: societal 0.32 1 0.49 0.32

1-Baseline Tradition 0.11 1 0.19 0.11

1-Baseline Conformity: rules 0.22 1 0.36 0.22

1-Baseline Conformity: interpersonal 0.04 1 0.07 0.04

1-Baseline Humility 0.07 1 0.14 0.07

1-Baseline Benevolence: caring 0.25 1 0.4 0.25

1-Baseline Benevolence: dependability 0.15 1 0.26 0.15

1-Baseline Universalism: concern 0.39 1 0.56 0.39

1-Baseline Universalism: nature 0.08 1 0.15 0.08

1-Baseline Universalism: tolerance 0.12 1 0.22 0.12

1-Baseline Universalism: objectivity 0.2 1 0.33 0.2

**1-Baseline Mean 0.17 1 0.29 0.17**

Bert Self-direction: thought 0.84 0.77 0.81 0.93

Bert Self-direction: action 0.88 0.71 0.78 0.9

Bert Stimulation 0.83 0.45 0.58 0.97

Bert Hedonism 0.9 0.54 0.68 0.98

Bert Achievement 0.88 0.73 0.8 0.9

Bert Power: dominance 0.83 0.45 0.58 0.93

Bert Power: resources 0.82 0.78 0.8 0.96

Bert Face 0.85 0.33 0.47 0.95

Bert Security: personal 0.87 0.83 0.85 0.89

Bert Security: societal 0.83 0.82 0.83 0.89

Bert Tradition 0.86 0.66 0.74 0.95

Bert Conformity: rules 0.87 0.67 0.75 0.9

Bert Conformity: interpersonal 0.99 0.47 0.64 0.98

Bert Humility 0.9 0.56 0.69 0.96

Bert Benevolence: caring 0.83 0.69 0.75 0.89

Bert Benevolence: dependability 0.86 0.56 0.68 0.92

Bert Universalism: concern 0.82 0.8 0.81 0.85

Bert Universalism: nature 0.95 0.78 0.85 0.98

Bert Universalism: tolerance 0.75 0.67 0.71 0.93

Bert Universalism: objectivity 0.82 0.59 0.69 0.9

**Bert Mean 0.86 0.64 0.74 0.93**

SVM Self-direction: thought 0.85 0.7 0.77 0.92

SVM Self-direction: action 0.83 0.68 0.75 0.88

SVM Stimulation 0.77 0.66 0.71 0.98

SVM Hedonism 0.86 0.7 0.77 0.99

SVM Achievement 0.81 0.68 0.74 0.86

SVM Power: dominance 0.78 0.52 0.63 0.93

SVM Power: resources 0.81 0.74 0.77 0.95

SVM Face 0.76 0.56 0.65 0.96

SVM Security: personal 0.81 0.75 0.78 0.84

SVM Security: societal 0.83 0.71 0.77 0.86

SVM Tradition 0.86 0.56 0.68 0.94

SVM Conformity: rules 0.73 0.68 0.71 0.88

SVM Conformity: interpersonal 0.92 0.65 0.76 0.98

SVM Humility 0.77 0.63 0.69 0.96

SVM Benevolence: caring 0.72 0.68 0.7 0.85

SVM Benevolence: dependability 0.75 0.65 0.7 0.92

SVM Universalism: concern 0.81 0.69 0.74 0.82

SVM Universalism: nature 0.96 0.7 0.81 0.97

SVM Universalism: tolerance 0.68 0.63 0.66 0.92

SVM Universalism: objectivity 0.74 0.56 0.64 0.88

**SVM Mean 0.8 0.66 0.72 0.91**

**Date 11/29 New dataset Approach 2 Evaluation update:**

(base) xingyuchen@XingyudeMacBook-Pro-2 NLPSharedTask4 % Rscript src/R/Evaluation.R --data-dir data/ --predictions predictions.tsv

===> Loading files...

===> Evaluating predictions...

Method Label Precision Recall F1 Accuracy

1-Baseline Self-direction: thought 0.17 1 0.3 0.17

1-Baseline Self-direction: action 0.26 1 0.41 0.26

1-Baseline Stimulation 0.06 1 0.11 0.06

1-Baseline Hedonism 0.04 1 0.07 0.04

1-Baseline Achievement 0.27 1 0.42 0.27

1-Baseline Power: dominance 0.09 1 0.16 0.09

1-Baseline Power: resources 0.11 1 0.2 0.11

1-Baseline Face 0.07 1 0.13 0.07

1-Baseline Security: personal 0.38 1 0.55 0.38

1-Baseline Security: societal 0.31 1 0.48 0.31

1-Baseline Tradition 0.11 1 0.21 0.11

1-Baseline Conformity: rules 0.23 1 0.38 0.23

1-Baseline Conformity: interpersonal 0.04 1 0.08 0.04

1-Baseline Humility 0.08 1 0.15 0.08

1-Baseline Benevolence: caring 0.29 1 0.45 0.29

1-Baseline Benevolence: dependability 0.15 1 0.26 0.15

1-Baseline Universalism: concern 0.38 1 0.55 0.38

1-Baseline Universalism: nature 0.07 1 0.13 0.07

1-Baseline Universalism: tolerance 0.14 1 0.24 0.14

1-Baseline Universalism: objectivity 0.18 1 0.3 0.18

**1-Baseline Mean 0.17 1 0.29 0.17**

Bert Self-direction: thought 0.93 0.87 0.9 0.97

Bert Self-direction: action 0.95 0.9 0.92 0.96

Bert Stimulation 0.88 0.51 0.64 0.97

Bert Hedonism 0.93 0.64 0.76 0.98

Bert Achievement 0.94 0.9 0.92 0.96

Bert Power: dominance 0.94 0.59 0.72 0.96

Bert Power: resources 0.92 0.9 0.91 0.98

Bert Face 0.95 0.47 0.63 0.96

Bert Security: personal 0.94 0.94 0.94 0.95

Bert Security: societal 0.96 0.9 0.93 0.96

Bert Tradition 0.94 0.87 0.9 0.98

Bert Conformity: rules 0.94 0.88 0.91 0.96

Bert Conformity: interpersonal 0.98 0.64 0.77 0.98

Bert Humility 0.96 0.73 0.83 0.97

Bert Benevolence: caring 0.94 0.91 0.92 0.96

Bert Benevolence: dependability 0.97 0.76 0.85 0.96

Bert Universalism: concern 0.95 0.92 0.94 0.95

Bert Universalism: nature 0.99 0.87 0.93 0.99

Bert Universalism: tolerance 0.91 0.82 0.86 0.96

Bert Universalism: objectivity 0.93 0.83 0.88 0.96

**Bert Mean 0.94 0.79 0.86 0.97**

SVM Self-direction: thought 0.93 0.85 0.89 0.96

SVM Self-direction: action 0.93 0.87 0.9 0.95

SVM Stimulation 0.93 0.78 0.85 0.98

SVM Hedonism 0.94 0.83 0.88 0.99

SVM Achievement 0.93 0.86 0.9 0.95

SVM Power: dominance 0.93 0.85 0.89 0.98

SVM Power: resources 0.95 0.88 0.91 0.98

SVM Face 0.96 0.91 0.93 0.99

SVM Security: personal 0.92 0.88 0.9 0.93

SVM Security: societal 0.94 0.88 0.91 0.95

SVM Tradition 0.95 0.81 0.88 0.97

SVM Conformity: rules 0.89 0.89 0.89 0.95

SVM Conformity: interpersonal 0.98 0.9 0.94 1

SVM Humility 0.94 0.85 0.89 0.98

SVM Benevolence: caring 0.9 0.89 0.9 0.94

SVM Benevolence: dependability 0.89 0.87 0.88 0.97

SVM Universalism: concern 0.93 0.88 0.9 0.93

SVM Universalism: nature 0.99 0.88 0.93 0.99

SVM Universalism: tolerance 0.87 0.84 0.86 0.96

SVM Universalism: objectivity 0.92 0.82 0.87 0.95

**SVM Mean 0.93 0.86 0.89 0.97**

**Date 11/28 New dataset Approach 2:**

**Run docker:**

(base) xingyuchen@rgnt1-28-222-dhcp repo\_white\_paper % TAG=0.1.1-nocuda

(base) xingyuchen@rgnt1-28-222-dhcp repo\_white\_paper % GPUS=""

(base) xingyuchen@rgnt1-28-222-dhcp repo\_white\_paper % docker run --rm -it --init $GPUS \

--volume "$PWD/webis-argvalues-22:/data" \

--volume "$PWD/models:/models" \

--volume "$PWD:/output" \

ghcr.io/webis-de/acl22-value-classification:$TAG \

python predict.py --classifier bos --levels "2"

**Output:**

===> Bert: Predicting Level 2...

100%|████████████████████████████████████| 5220/5220 [00:00<00:00, 14767.33ex/s]

100%|████████████████████████████████████| 5220/5220 [00:00<00:00, 16715.13ex/s]

100%|█████████████████████████████████████████████| 6/6 [00:00<00:00, 14.29ba/s]

100%|█████████████████████████████████████████████| 6/6 [00:00<00:00, 16.20ba/s]

\*\*\*\*\* Running Prediction \*\*\*\*\*

Num examples = 5220

Batch size = 8

100%|█████████████████████████████████████████| 653/653 [07:10<00:00, 1.52it/s]

===> SVM: Predicting Level 2...

===> 1-Baseline: Predicting Level 2...

===> Writing predictions...

**Evaluation:**

(base) xingyuchen@rgnt1-28-222-dhcp repo\_white\_paper % Rscript src/R/Evaluation.R --data-dir webis-argvalues-22/ --predictions predictions.tsv

Warning message:

package ‘rlang’ was built under R version 4.1.2

===> Loading files...

No file for level 1 found.

No file for level 3 found.

No file for level 4a found.

No file for level 4b found.

===> Evaluating predictions...

Method Level Label Precision Recall F1 Accuracy

1-Baseline 2 Self-direction: thought 0.17 1 0.3 0.17

1-Baseline 2 Self-direction: action 0.26 1 0.41 0.26

1-Baseline 2 Stimulation 0.06 1 0.11 0.06

1-Baseline 2 Hedonism 0.04 1 0.07 0.04

1-Baseline 2 Achievement 0.27 1 0.42 0.27

1-Baseline 2 Power: dominance 0.09 1 0.16 0.09

1-Baseline 2 Power: resources 0.11 1 0.2 0.11

1-Baseline 2 Face 0.07 1 0.13 0.07

1-Baseline 2 Security: personal 0.38 1 0.55 0.38

1-Baseline 2 Security: societal 0.31 1 0.48 0.31

1-Baseline 2 Tradition 0.11 1 0.21 0.11

1-Baseline 2 Conformity: rules 0.23 1 0.38 0.23

1-Baseline 2 Conformity: interpersonal 0.04 1 0.08 0.04

1-Baseline 2 Humility 0.08 1 0.15 0.08

1-Baseline 2 Benevolence: caring 0.29 1 0.45 0.29

1-Baseline 2 Benevolence: dependability 0.15 1 0.26 0.15

1-Baseline 2 Universalism: concern 0.38 1 0.55 0.38

1-Baseline 2 Universalism: nature 0.07 1 0.13 0.07

1-Baseline 2 Universalism: tolerance 0.14 1 0.24 0.14

1-Baseline 2 Universalism: objectivity 0.18 1 0.3 0.18

**1-Baseline 2 Mean 0.17 1 0.29 0.17**

Bert 2 Self-direction: thought 0.93 0.87 0.9 0.97

Bert 2 Self-direction: action 0.95 0.9 0.92 0.96

Bert 2 Stimulation 0.88 0.51 0.64 0.97

Bert 2 Hedonism 0.93 0.64 0.76 0.98

Bert 2 Achievement 0.94 0.9 0.92 0.96

Bert 2 Power: dominance 0.94 0.59 0.72 0.96

Bert 2 Power: resources 0.92 0.9 0.91 0.98

Bert 2 Face 0.95 0.47 0.63 0.96

Bert 2 Security: personal 0.94 0.94 0.94 0.95

Bert 2 Security: societal 0.96 0.9 0.93 0.96

Bert 2 Tradition 0.94 0.87 0.9 0.98

Bert 2 Conformity: rules 0.94 0.88 0.91 0.96

Bert 2 Conformity: interpersonal 0.98 0.64 0.77 0.98

Bert 2 Humility 0.96 0.73 0.83 0.97

Bert 2 Benevolence: caring 0.94 0.91 0.92 0.96

Bert 2 Benevolence: dependability 0.97 0.76 0.85 0.96

Bert 2 Universalism: concern 0.95 0.92 0.94 0.95

Bert 2 Universalism: nature 0.99 0.87 0.93 0.99

Bert 2 Universalism: tolerance 0.91 0.82 0.86 0.96

Bert 2 Universalism: objectivity 0.93 0.83 0.88 0.96

**Bert 2 Mean 0.94 0.79 0.86 0.97**

SVM 2 Self-direction: thought 0.93 0.85 0.89 0.96

SVM 2 Self-direction: action 0.93 0.87 0.9 0.95

SVM 2 Stimulation 0.93 0.78 0.85 0.98

SVM 2 Hedonism 0.94 0.83 0.88 0.99

SVM 2 Achievement 0.93 0.86 0.9 0.95

SVM 2 Power: dominance 0.93 0.85 0.89 0.98

SVM 2 Power: resources 0.95 0.88 0.91 0.98

SVM 2 Face 0.96 0.91 0.93 0.99

SVM 2 Security: personal 0.92 0.88 0.9 0.93

SVM 2 Security: societal 0.94 0.88 0.91 0.95

SVM 2 Tradition 0.95 0.81 0.88 0.97

SVM 2 Conformity: rules 0.89 0.89 0.89 0.95

SVM 2 Conformity: interpersonal 0.98 0.9 0.94 1

SVM 2 Humility 0.94 0.85 0.89 0.98

SVM 2 Benevolence: caring 0.9 0.89 0.9 0.94

SVM 2 Benevolence: dependability 0.89 0.87 0.88 0.97

SVM 2 Universalism: concern 0.93 0.88 0.9 0.93

SVM 2 Universalism: nature 0.99 0.88 0.93 0.99

SVM 2 Universalism: tolerance 0.87 0.84 0.86 0.96

SVM 2 Universalism: objectivity 0.92 0.82 0.87 0.95

**SVM 2 Mean 0.93 0.86 0.89 0.97**

**Date 11/27 White Paper Approach 1:**

Method Level Label Precision Recall F1 Accuracy

1-Baseline 2 Self-direction: thought 0.15 1 0.25 0.15

1-Baseline 2 Self-direction: action 0.24 1 0.39 0.24

1-Baseline 2 Stimulation 0.04 1 0.08 0.04

1-Baseline 2 Hedonism 0.01 1 0.02 0.01

1-Baseline 2 Achievement 0.31 1 0.47 0.31

1-Baseline 2 Power: dominance 0.09 1 0.16 0.09

1-Baseline 2 Power: resources 0.08 1 0.14 0.08

1-Baseline 2 Face 0.05 1 0.09 0.05

1-Baseline 2 Security: personal 0.4 1 0.57 0.4

1-Baseline 2 Security: societal 0.28 1 0.44 0.28

1-Baseline 2 Tradition 0.12 1 0.21 0.12

1-Baseline 2 Conformity: rules 0.2 1 0.34 0.2

1-Baseline 2 Conformity: interpersonal 0.02 1 0.04 0.02

1-Baseline 2 Humility 0.08 1 0.14 0.08

1-Baseline 2 Benevolence: caring 0.26 1 0.41 0.26

1-Baseline 2 Benevolence: dependability 0.11 1 0.2 0.11

1-Baseline 2 Universalism: concern 0.35 1 0.52 0.35

1-Baseline 2 Universalism: nature 0.06 1 0.12 0.06

1-Baseline 2 Universalism: tolerance 0.13 1 0.23 0.13

1-Baseline 2 Universalism: objectivity 0.2 1 0.33 0.2

**1-Baseline 2 Mean 0.16 1 0.27 0.16**

Bert 2 Self-direction: thought 0.41 0.28 0.34 0.84

Bert 2 Self-direction: action 0.64 0.42 0.51 0.8

Bert 2 Stimulation 0 0 0 0.95

Bert 2 Hedonism 0.33 0.17 0.22 0.99

Bert 2 Achievement 0.65 0.56 0.6 0.77

Bert 2 Power: dominance 0.25 0.11 0.15 0.9

Bert 2 Power: resources 0.34 0.37 0.36 0.9

Bert 2 Face 0.5 0.06 0.11 0.95

Bert 2 Security: personal 0.69 0.71 0.7 0.76

Bert 2 Security: societal 0.6 0.44 0.51 0.76

Bert 2 Tradition 0.62 0.26 0.37 0.89

Bert 2 Conformity: rules 0.41 0.26 0.32 0.78

Bert 2 Conformity: interpersonal 0.5 0.13 0.21 0.98

Bert 2 Humility 0.27 0.05 0.09 0.92

Bert 2 Benevolence: caring 0.52 0.47 0.5 0.75

Bert 2 Benevolence: dependability 0.37 0.13 0.19 0.88

Bert 2 Universalism: concern 0.59 0.55 0.57 0.71

Bert 2 Universalism: nature 0.71 0.22 0.33 0.95

Bert 2 Universalism: tolerance 0.3 0.18 0.22 0.84

Bert 2 Universalism: objectivity 0.48 0.29 0.36 0.79

**Bert 2 Mean 0.46 0.28 0.35 0.86**

SVM 2 Self-direction: thought 0.33 0.16 0.22 0.83

SVM 2 Self-direction: action 0.49 0.3 0.37 0.75

SVM 2 Stimulation 0 0 0 0.94

SVM 2 Hedonism 0 0 0 0.98

SVM 2 Achievement 0.56 0.39 0.46 0.72

SVM 2 Power: dominance 0.18 0.11 0.14 0.88

SVM 2 Power: resources 0.24 0.16 0.19 0.9

SVM 2 Face 0.23 0.09 0.13 0.95

SVM 2 Security: personal 0.54 0.46 0.5 0.63

SVM 2 Security: societal 0.53 0.39 0.45 0.73

SVM 2 Tradition 0.38 0.1 0.16 0.87

SVM 2 Conformity: rules 0.36 0.36 0.36 0.74

SVM 2 Conformity: interpersonal 0.25 0.07 0.11 0.98

SVM 2 Humility 0.24 0.07 0.11 0.91

SVM 2 Benevolence: caring 0.39 0.39 0.39 0.69

SVM 2 Benevolence: dependability 0.15 0.17 0.16 0.8

SVM 2 Universalism: concern 0.47 0.38 0.42 0.64

SVM 2 Universalism: nature 0.71 0.11 0.19 0.94

SVM 2 Universalism: tolerance 0.16 0.14 0.15 0.79

SVM 2 Universalism: objectivity 0.3 0.18 0.22 0.75

**SVM 2 Mean 0.33 0.2 0.25 0.82**