

Multi-task Learning with Pre-trained Language Models for Mental Illness Screening:

Supplemental Tables

This document provides supplemental tables that were omitted from the original manuscript.

TABLE I
BERT: AVERAGE F1 SCORE FOR EACH OF THE 15 QUESTION DATASETS FOR BERT.

Dataset	MDD				PTSD			
	STL	MTL-NW	MTL-AW	MTL-MW	STL	MTL-NW	MTL-AW	MTL-MW
D1	0.69 ± 0.02	0.69 ± 0.01	0.54 ± 0.07	0.69 ± 0.04	0.69 ± 0.00	0.58 ± 0.07	0.58 ± 0.05	0.67 ± 0.02
D2	0.67 ± 0.02	0.69 ± 0.03	0.70 ± 0.02	0.72 ± 0.03	0.53 ± 0.15	0.64 ± 0.03	0.63 ± 0.06	0.69 ± 0.00
D3	0.69 ± 0.03	0.61 ± 0.08	0.68 ± 0.02	0.72 ± 0.05	0.71 ± 0.02	0.74 ± 0.04	0.66 ± 0.04	0.75 ± 0.04
D4	0.70 ± 0.01	0.70 ± 0.02	0.70 ± 0.01	0.76 ± 0.05	0.69 ± 0.01	0.71 ± 0.03	0.61 ± 0.05	0.72 ± 0.02
D5	0.86 ± 0.05	0.86 ± 0.05	0.83 ± 0.07	0.82 ± 0.11	0.84 ± 0.05	0.76 ± 0.02	0.82 ± 0.04	0.82 ± 0.04
D6	0.61 ± 0.00	0.63 ± 0.05	0.61 ± 0.00	0.62 ± 0.03	0.61 ± 0.00	0.64 ± 0.05	0.63 ± 0.05	0.63 ± 0.03
D7	0.78 ± 0.05	0.85 ± 0.02	0.81 ± 0.05	0.80 ± 0.05	0.72 ± 0.03	0.76 ± 0.06	0.74 ± 0.04	0.79 ± 0.03
D8	0.69 ± 0.00	0.69 ± 0.00	0.69 ± 0.01	0.68 ± 0.01	0.69 ± 0.00	0.58 ± 0.02	0.68 ± 0.02	0.51 ± 0.11
D9	0.56 ± 0.05	0.55 ± 0.02	0.60 ± 0.09	0.64 ± 0.04	0.63 ± 0.01	0.66 ± 0.03	0.65 ± 0.04	0.58 ± 0.04
D10	0.69 ± 0.03	0.69 ± 0.03	0.71 ± 0.06	0.67 ± 0.01	0.79 ± 0.04	0.75 ± 0.07	0.72 ± 0.02	0.76 ± 0.03
D11	0.68 ± 0.06	0.62 ± 0.02	0.69 ± 0.08	0.61 ± 0.03	0.67 ± 0.00	0.70 ± 0.06	0.64 ± 0.11	0.67 ± 0.04
D12	0.62 ± 0.05	0.61 ± 0.03	0.63 ± 0.01	0.68 ± 0.03	0.69 ± 0.04	0.65 ± 0.02	0.69 ± 0.05	0.73 ± 0.05
D13	0.60 ± 0.07	0.63 ± 0.15	0.63 ± 0.12	0.70 ± 0.04	0.68 ± 0.05	0.61 ± 0.04	0.67 ± 0.02	0.64 ± 0.03
D14	0.69 ± 0.00	0.70 ± 0.02	0.71 ± 0.01	0.70 ± 0.01	0.69 ± 0.00	0.73 ± 0.08	0.71 ± 0.02	0.69 ± 0.00
D15	0.66 ± 0.02	0.64 ± 0.01	0.65 ± 0.02	0.73 ± 0.10	0.81 ± 0.05	0.84 ± 0.04	0.78 ± 0.04	0.77 ± 0.04

TABLE II
ALBERT: AVERAGE F1 SCORE FOR EACH OF THE 15 QUESTION DATASETS FOR ALBERT.

Dataset	MDD				PTSD			
	STL	MTL-NW	MTL-AW	MTL-MW	STL	MTL-NW	MTL-AW	MTL-MW
D1	0.70 ± 0.02	0.69 ± 0.01	0.70 ± 0.01	0.69 ± 0.00	0.68 ± 0.02	0.70 ± 0.04	0.68 ± 0.07	0.73 ± 0.05
D2	0.67 ± 0.05	0.72 ± 0.00	0.71 ± 0.00	0.71 ± 0.03	0.69 ± 0.02	0.70 ± 0.08	0.64 ± 0.09	0.73 ± 0.01
D3	0.64 ± 0.00	0.63 ± 0.02	0.65 ± 0.01	0.67 ± 0.03	0.76 ± 0.04	0.73 ± 0.02	0.73 ± 0.02	0.70 ± 0.04
D4	0.71 ± 0.01	0.70 ± 0.04	0.71 ± 0.04	0.71 ± 0.02	0.70 ± 0.01	0.66 ± 0.03	0.67 ± 0.06	0.72 ± 0.01
D5	0.81 ± 0.10	0.64 ± 0.17	0.75 ± 0.07	0.88 ± 0.08	0.67 ± 0.00	0.68 ± 0.03	0.71 ± 0.06	0.72 ± 0.05
D6	0.61 ± 0.01	0.65 ± 0.04	0.61 ± 0.00	0.61 ± 0.00	0.61 ± 0.00	0.65 ± 0.04	0.61 ± 0.04	0.63 ± 0.05
D7	0.78 ± 0.06	0.74 ± 0.05	0.68 ± 0.04	0.72 ± 0.02	0.71 ± 0.03	0.72 ± 0.03	0.72 ± 0.01	0.72 ± 0.02
D8	0.71 ± 0.03	0.71 ± 0.02	0.71 ± 0.03	0.71 ± 0.02	0.69 ± 0.01	0.65 ± 0.02	0.66 ± 0.02	0.68 ± 0.04
D9	0.55 ± 0.02	0.49 ± 0.07	0.54 ± 0.10	0.47 ± 0.04	0.58 ± 0.10	0.48 ± 0.04	0.52 ± 0.10	0.69 ± 0.03
D10	0.64 ± 0.02	0.65 ± 0.03	0.62 ± 0.02	0.63 ± 0.01	0.71 ± 0.04	0.72 ± 0.06	0.67 ± 0.02	0.72 ± 0.03
D11	0.62 ± 0.02	0.63 ± 0.05	0.61 ± 0.00	0.60 ± 0.04	0.67 ± 0.00	0.70 ± 0.04	0.62 ± 0.09	0.66 ± 0.01
D12	0.66 ± 0.01	0.67 ± 0.03	0.66 ± 0.02	0.65 ± 0.04	0.69 ± 0.03	0.69 ± 0.02	0.70 ± 0.03	0.69 ± 0.02
D13	0.72 ± 0.02	0.69 ± 0.03	0.68 ± 0.02	0.69 ± 0.02	0.69 ± 0.03	0.73 ± 0.03	0.68 ± 0.02	0.69 ± 0.02
D14	0.71 ± 0.00	0.71 ± 0.03	0.72 ± 0.02	0.74 ± 0.03	0.73 ± 0.04	0.73 ± 0.02	0.71 ± 0.00	0.73 ± 0.02
D15	0.67 ± 0.05	0.64 ± 0.00	0.65 ± 0.03	0.65 ± 0.02	0.10 ± 0.04	0.68 ± 0.05	0.70 ± 0.03	0.67 ± 0.02

TABLE III
RoBERTa: AVERAGE F1 SCORE FOR EACH OF THE 15 QUESTION DATASETS FOR RoBERTa.

Dataset	MDD				PTSD			
	STL	MTL-NW	MTL-AW	MTL-MW	STL	MTL-NW	MTL-AW	MTL-MW
D1	0.66 ± 0.03	0.48 ± 0.08	0.65 ± 0.01	0.60 ± 0.05	0.67 ± 0.02	0.72 ± 0.05	0.62 ± 0.06	0.61 ± 0.05
D2	0.66 ± 0.07	0.66 ± 0.00	0.66 ± 0.06	0.71 ± 0.02	0.73 ± 0.04	0.64 ± 0.01	0.58 ± 0.04	0.70 ± 0.01
D3	0.70 ± 0.04	0.69 ± 0.02	0.70 ± 0.02	0.71 ± 0.03	0.77 ± 0.05	0.64 ± 0.07	0.49 ± 0.1	0.70 ± 0.03
D4	0.72 ± 0.01	0.69 ± 0.01	0.69 ± 0.01	0.71 ± 0.02	0.74 ± 0.01	0.67 ± 0.04	0.72 ± 0.02	0.71 ± 0.02
D5	0.83 ± 0.07	0.71 ± 0.18	0.69 ± 0.14	0.77 ± 0.00	0.67 ± 0.04	0.61 ± 0.11	0.64 ± 0.05	0.67 ± 0.09
D6	0.53 ± 0.09	0.58 ± 0.03	0.58 ± 0.05	0.60 ± 0.02	0.59 ± 0.03	0.61 ± 0.00	0.56 ± 0.06	0.62 ± 0.03
D7	0.73 ± 0.02	0.65 ± 0.04	0.64 ± 0.05	0.72 ± 0.03	0.83 ± 0.03	0.80 ± 0.05	0.74 ± 0.05	0.83 ± 0.07
D8	0.66 ± 0.03	0.58 ± 0.01	0.61 ± 0.05	0.66 ± 0.02	0.67 ± 0.02	0.66 ± 0.04	0.67 ± 0.05	0.69 ± 0.00
D9	0.40 ± 0.07	0.43 ± 0.04	0.51 ± 0.06	0.47 ± 0.04	0.62 ± 0.01	0.65 ± 0.01	0.65 ± 0.02	0.63 ± 0.02
D10	0.68 ± 0.01	0.67 ± 0.00	0.71 ± 0.00	0.69 ± 0.02	0.70 ± 0.02	0.67 ± 0.01	0.66 ± 0.03	0.68 ± 0.01
D11	0.47 ± 0.15	0.59 ± 0.05	0.69 ± 0.05	0.59 ± 0.02	0.65 ± 0.01	0.59 ± 0.06	0.58 ± 0.07	0.64 ± 0.00
D12	0.66 ± 0.05	0.55 ± 0.06	0.63 ± 0.04	0.65 ± 0.03	0.71 ± 0.05	0.73 ± 0.04	0.64 ± 0.05	0.71 ± 0.04
D13	0.64 ± 0.07	0.60 ± 0.05	0.63 ± 0.02	0.71 ± 0.06	0.72 ± 0.05	0.64 ± 0.04	0.67 ± 0.02	0.65 ± 0.03
D14	0.69 ± 0.00	0.69 ± 0.02	0.71 ± 0.27	0.65 ± 0.05	0.71 ± 0.01	0.69 ± 0.01	0.65 ± 0.06	0.67 ± 0.03
D15	0.72 ± 0.02	0.59 ± 0.15	0.65 ± 0.18	0.64 ± 0.00	0.69 ± 0.04	0.68 ± 0.06	0.70 ± 0.06	0.68 ± 0.04

TABLE IV
MENTALBERT: AVERAGE F1 SCORE FOR EACH OF THE 15 QUESTION DATASETS FOR MENTALBERT.

Dataset	MDD				PTSD			
	STL	MTL-NW	MTL-AW	MTL-MW	STL	MTL-NW	MTL-AW	MTL-MW
D1	0.64 ± 0.04	0.69 ± 0.00	0.68 ± 0.02	0.65 ± 0.04	0.67 ± 0.02	0.65 ± 0.06	0.59 ± 0.09	0.64 ± 0.05
D2	0.68 ± 0.01	0.65 ± 0.01	0.66 ± 0.02	0.71 ± 0.01	0.67 ± 0.02	0.45 ± 0.14	0.43 ± 0.11	0.65 ± 0.01
D3	0.68 ± 0.02	0.67 ± 0.03	0.63 ± 0.02	0.66 ± 0.05	0.76 ± 0.03	0.67 ± 0.05	0.51 ± 0.06	0.69 ± 0.04
D4	0.70 ± 0.01	0.70 ± 0.02	0.70 ± 0.01	0.73 ± 0.04	0.70 ± 0.02	0.50 ± 0.03	0.31 ± 0.09	0.72 ± 0.02
D5	0.81 ± 0.07	0.83 ± 0.08	0.79 ± 0.06	0.78 ± 0.06	0.75 ± 0.00	0.75 ± 0.00	0.73 ± 0.04	0.75 ± 0.00
D6	0.61 ± 0.00	0.56 ± 0.03	0.61 ± 0.00	0.66 ± 0.03	0.61 ± 0.00	0.52 ± 0.08	0.63 ± 0.03	0.65 ± 0.07
D7	0.76 ± 0.02	0.79 ± 0.06	0.75 ± 0.04	0.77 ± 0.04	0.71 ± 0.00	0.71 ± 0.00	0.70 ± 0.01	0.77 ± 0.03
D8	0.69 ± 0.00	0.69 ± 0.00	0.69 ± 0.00	0.69 ± 0.04	0.69 ± 0.00	0.69 ± 0.03	0.69 ± 0.01	0.69 ± 0.02
D9	0.59 ± 0.06	0.48 ± 0.05	0.52 ± 0.02	0.50 ± 0.00	0.61 ± 0.03	0.57 ± 0.07	0.65 ± 0.01	0.42 ± 0.03
D10	0.72 ± 0.02	0.73 ± 0.05	0.68 ± 0.03	0.71 ± 0.02	0.72 ± 0.02	0.75 ± 0.03	0.78 ± 0.08	0.72 ± 0.02
D11	0.59 ± 0.01	0.61 ± 0.03	0.63 ± 0.04	0.62 ± 0.03	0.65 ± 0.01	0.60 ± 0.05	0.57 ± 0.05	0.65 ± 0.02
D12	0.48 ± 0.04	0.58 ± 0.04	0.59 ± 0.04	0.55 ± 0.03	0.67 ± 0.02	0.65 ± 0.02	0.61 ± 0.02	0.65 ± 0.01
D13	0.60 ± 0.09	0.33 ± 0.05	0.31 ± 0.06	0.60 ± 0.04	0.65 ± 0.06	0.58 ± 0.03	0.60 ± 0.05	0.67 ± 0.05
D14	0.72 ± 0.02	0.72 ± 0.03	0.72 ± 0.03	0.70 ± 0.01	0.76 ± 0.01	0.70 ± 0.04	0.69 ± 0.01	0.72 ± 0.02
D15	0.67 ± 0.02	0.65 ± 0.01	0.65 ± 0.01	0.65 ± 0.01	0.72 ± 0.05	0.72 ± 0.02	0.74 ± 0.04	0.72 ± 0.01