

Data Type	Model	Class	Layer 1				Layer 2				Layer 3				Layer 4				Layer 5			
			Precision	Recall	F-score	ROC AUC score	Precision	Recall	F-score	ROC AUC score	Precision	Recall	F-score	ROC AUC score	Precision	Recall	F-score	ROC AUC score	Precision	Recall	F-score	ROC AUC score
Balanced Dataset	RoBERTaCS-suberta-multitask	Balanced	0.786	0.691	0.735	0.728	0.652	0.672	0.736	0.745	0.682	0.725	0.782	0.765	0.778	0.722	0.748	0.786	0.786	0.786	0.786	0.786
		Imbalanced	0.841	0.860	0.850	0.851	0.827	0.869	0.853	0.853	0.838	0.864	0.896	0.896	0.847	0.857	0.852	0.852	0.852	0.852	0.852	0.852
		Imbalanced	0.845	0.896	0.871	0.756	0.759	0.769	0.694	0.717	0.720	0.774	0.771	0.772	0.773	0.884	0.591	0.602	0.602	0.602	0.602	0.602
	lex-embeder-multitask	Balanced	0.840	0.867	0.853	0.854	0.840	0.856	0.848	0.844	0.857	0.853	0.844	0.857	0.861	0.841	0.855	0.858	0.858	0.858	0.858	0.858
		Imbalanced	0.793	0.728	0.744	0.745	0.773	0.745	0.759	0.759	0.814	0.762	0.787	0.798	0.844	0.714	0.785	0.776	0.771	0.776	0.776	0.776
		Imbalanced	0.856	0.854	0.855	0.855	0.859	0.859	0.860	0.856	0.854	0.863	0.859	0.859	0.857	0.864	0.859	0.859	0.859	0.859	0.859	0.859
	KR-SBERT-V-60K-40a-NL1-avgSTS	Balanced	0.793	0.728	0.744	0.745	0.773	0.745	0.759	0.759	0.814	0.762	0.787	0.798	0.844	0.714	0.785	0.776	0.771	0.776	0.776	0.776
		Imbalanced	0.856	0.854	0.855	0.855	0.859	0.859	0.860	0.856	0.854	0.863	0.859	0.859	0.857	0.864	0.859	0.859	0.859	0.859	0.859	0.859
		Imbalanced	0.793	0.728	0.744	0.745	0.773	0.745	0.759	0.759	0.814	0.762	0.787	0.798	0.844	0.714	0.785	0.776	0.771	0.776	0.776	0.776
	bertbase-lex-v2	Balanced	0.793	0.728	0.744	0.745	0.773	0.745	0.759	0.759	0.814	0.762	0.787	0.798	0.844	0.714	0.785	0.776	0.771	0.776	0.776	0.776
		Imbalanced	0.856	0.854	0.855	0.855	0.859	0.859	0.860	0.856	0.854	0.863	0.859	0.859	0.857	0.864	0.859	0.859	0.859	0.859	0.859	0.859
		Imbalanced	0.793	0.728	0.744	0.745	0.773	0.745	0.759	0.759	0.814	0.762	0.787	0.798	0.844	0.714	0.785	0.776	0.771	0.776	0.776	0.776
	paraphrase-multitask-MiniLM-L12-v2	Balanced	0.723	0.511	0.599	0.610	0.745	0.627	0.750	0.590	0.728	0.529	0.688	0.549	0.745	0.511	0.610	0.671	0.571	0.671	0.671	0.551
		Imbalanced	0.841	0.856	0.848	0.848	0.862	0.848	0.862	0.841	0.860	0.873	0.848	0.862	0.841	0.860	0.873	0.848	0.862	0.848	0.851	0.851
		Imbalanced	0.862	0.876	0.869	0.869	0.855	0.855	0.865	0.869	0.752	0.852	0.861	0.867	0.779	0.867	0.859	0.867	0.867	0.867	0.867	0.867
Imbalanced Dataset	RoBERTaCS-suberta-multitask	Balanced	0.860	0.894	0.877	0.877	0.860	0.882	0.875	0.875	0.870	0.881	0.875	0.875	0.840	0.895	0.867	0.867	0.867	0.867	0.867	0.867
		Imbalanced	0.828	0.563	0.678	0.686	0.765	0.568	0.650	0.677	0.753	0.607	0.707	0.710	0.800	0.646	0.715	0.715	0.715	0.715	0.715	0.715
		Imbalanced	0.863	0.890	0.877	0.879	0.865	0.887	0.876	0.876	0.870	0.880	0.875	0.875	0.872	0.867	0.879	0.879	0.879	0.879	0.879	0.879
	lex-embeder-multitask	Balanced	0.791	0.674	0.733	0.623	0.841	0.678	0.759	0.759	0.814	0.699	0.793	0.839	0.598	0.795	0.723	0.723	0.723	0.723	0.723	0.723
		Imbalanced	0.871	0.871	0.871	0.871	0.871	0.868	0.871	0.871	0.870	0.862	0.870	0.866	0.867	0.871	0.871	0.871	0.871	0.871	0.871	0.871
		Imbalanced	0.791	0.674	0.733	0.623	0.841	0.678	0.759	0.759	0.814	0.699	0.793	0.839	0.598	0.795	0.723	0.723	0.723	0.723	0.723	0.723
	KR-SBERT-V-60K-40a-NL1-avgSTS	Balanced	0.791	0.674	0.733	0.623	0.841	0.678	0.759	0.759	0.814	0.699	0.793	0.839	0.598	0.795	0.723	0.723	0.723	0.723	0.723	0.723
		Imbalanced	0.871	0.871	0.871	0.871	0.871	0.868	0.871	0.871	0.870	0.862	0.870	0.866	0.867	0.871	0.871	0.871	0.871	0.871	0.871	0.871
		Imbalanced	0.791	0.674	0.733	0.623	0.841	0.678	0.759	0.759	0.814	0.699	0.793	0.839	0.598	0.795	0.723	0.723	0.723	0.723	0.723	0.723
	bertbase-lex-v2	Balanced	0.791	0.674	0.733	0.623	0.841	0.678	0.759	0.759	0.814	0.699	0.793	0.839	0.598	0.795	0.723	0.723	0.723	0.723	0.723	0.723
		Imbalanced	0.871	0.871	0.871	0.871	0.871	0.868	0.871	0.871	0.870	0.862	0.870	0.866	0.867	0.871	0.871	0.871	0.871	0.871	0.871	0.871
		Imbalanced	0.791	0.674	0.733	0.623	0.841	0.678	0.759	0.759	0.814	0.699	0.793	0.839	0.598	0.795	0.723	0.723	0.723	0.723	0.723	0.723
	paraphrase-multitask-MiniLM-L12-v2	Balanced	0.843	0.831	0.837	0.837	0.843	0.837	0.837	0.843	0.831	0.836	0.839	0.839	0.835	0.835	0.835	0.835	0.835	0.835	0.835	0.835
		Imbalanced	0.897	0.858	0.877	0.858	0.858	0.863	0.860	0.863	0.853	0.861	0.867	0.867	0.853	0.855	0.854	0.854	0.854	0.854	0.854	0.854
		Imbalanced	0.897	0.858	0.877	0.858	0.858	0.863	0.860	0.863	0.853	0.861	0.867	0.867	0.853	0.855	0.854	0.854	0.854	0.854	0.854	0.854

Table 1: Model Performance Across Different Layers on Balanced and Imbalanced dataset