

Appendix

Table 1: Certification results of PLIP on 3 datasets for zero-shot PLIP, naive prompt learning and our proposed PromptSmooth methods.

Method	Certified Accuracy at ℓ_2 radius (%)						
	0.1	0.25	0.5	0.75	1.0	1.25	1.5
PanNuke (Binary)							
Zero-shot PLIP (No PL)	(59.6)55.8	(52)50.8	(52)50.2	(50.2)50.0	(50.2)50.0	(50.2)50.0	(50.2)50.0
Naive PL (CoOp) [1]	(73.6)69.8	(73.6)61.8	(50.0)50.0	(50.0)50.0	(50.0)50.0	(50.0)50.0	(50.0)50.0
Zero-shot PromptSmooth	(51.6)51.4	(51.6)51.4	(50.6)50.6	(50.6)50.6	(50.6)50.6	(50.6)50.6	(50.6)50.6
Few-shot PromptSmooth	(73.2)68.8	(73.2)58.8	(50.0)50.0	(50.0)50.0	(50.0)50.0	(50.0)50.0	(50.0)50.0
PromptSmooth	(73.8) 73.8	(73.8) 73.8	(68.8) 68.8	(68.8) 68.8	(65.2) 65.2	(65.2) 65.2	(65.2) 65.2
SICAPv2 (4 Classes)							
Zero-shot PLIP (No PL)	(43.2)40.0	(43.2)33.6	(25.0)25.5	(25.0)25.0	(25.0)25.0	(25.0)25.0	(25.0)25.0
Naive PL (CoOp) [1]	(45.0)37.0	(45.0)27.2	(25.0)25.5	(25.0)25.0	(25.0)25.0	(25.0)25.0	(25.0)25.0
Zero-shot PromptSmooth	(44.2)42.8	(44.2)39.6	(44.2)33.8	(44.2)27.8	(25.0)25.0	(25.0)25.0	(25.0)25.0
Few-shot PromptSmooth	(51.4)40.0	(51.4)26.6	(27.8)15.8	(27.8)10.8	(27.8)7.40	(27.8)4.40	(27.8)2.00
PromptSmooth	(51.6) 50.8	(51.6) 49.6	(46.8) 39.4	(46.8) 35.0	(46.8) 30.2	(46.8) 30.0	(46.8) 28.2
SkinCancer (16 Classes)							
Zero-shot PLIP (No PL)	(26.6)19.0	(14.2)9.80	(6.0)5.80	(6.00)4.80	(6.00)4.60	(6.00)4.39	(6.00)4.39
Naive PL (CoOp) [1]	(67.2)57.8	(67.2)43.8	(34.2)16.6	(34.2)7.00	(6.20)6.20	(6.20)6.20	(6.20)6.20
Zero-shot PromptSmooth	(25)23.2	(25)19.6	(14.2)11.6	(6.40)6.40	(6.40)6.40	(6.40)6.40	(6.40)6.40
Few-shot PromptSmooth	(67.0)58.0	(67.0)44.6	(54.4)27.0	(36.6)15.0	(36.6)9.00	(6.20)6.20	(6.20)6.20
PromptSmooth	(68.6) 67.6	(68.6) 64.8	(56.4) 50.2	(56.4) 46.0	(38.2) 33.8	(38.2) 31.0	(38.2) 29.6

Table 2: Certification results for Quilt on 2 datasets.

Method	Certified Accuracy at ℓ_2 radius (%)						
	0.1	0.25	0.5	0.75	1	1.25	1.5
SICAPv2 (4 Classes)							
Zero-shot Quilt (No PL)	(25.0)25.0	(25.0)25.0	(25.0)25.0	(25)25.0	(25)24.6	(25)24.2	(25)23.8
Naive PL (CoOp) [1]	(55.8)47.2	(55.8)35.8	(25.0)25.0	(25.0)25.0	(25.0)25.0	(25.0)25.0	(25.0)25.0
Zero-shot PromptSmooth	(25.8)25.8	(25.8)25.6	(25.8)25.6	(25.8)25.2	(25.8)25.0	(25.8)24.8	(25.8)24.8
Few-shot PromptSmooth	(62.0)49.8	(62.0)31.8	(31.2)17.0	(31.2)10.8	(31.2)6.40	(31.2)2.60	(31.2)0.60
PromptSmooth	(60.0) 59.0	(60.0) 57.0	(55.4) 49.8	(55.4) 46.8	(32.2) 31.0	(32.2) 30.6	(32.2) 30.6
SkinCancer (16 Classes)							
Zero-shot Quilt (No PL)	(33.0)25.8	(33.0)15.8	(6.20)6.20	(6.20)6.20	(6.20)6.20	(6.20)6.20	(6.20)6.20
Naive PL (CoOp) [1]	(52.8)43.2	(52.8)31.0	(18.2)7.60	(6.80)6.20	(6.80)6.20	(6.80)6.20	(6.80)6.20
Zero-shot PromptSmooth	(29.2)26.4	(29.2)20.6	(14.79)9.80	(14.79)6.60	(4.20)3.20	(4.20)3.20	(4.20)2.40
Few-shot PromptSmooth	(69.4)61.0	(64.4)51.0	(64.4)53.0	(64.4)35.0	(64.4)17.6	(46.0)9.20	(46.0)3.80
PromptSmooth	(71.0) 70.0	(71.0) 67.0	(66.2) 62.0	(66.2) 57.8	(46.8) 42.6	(46.8) 41.6	(46.8) 40.6

References

1. Zhou, K., Yang, J., Loy, C.C., Liu, Z.: Learning to prompt for vision-language models. *International Journal of Computer Vision* **130**(9), 2337–2348 (2022)