

Table 1: Results on additional datasets. The bold text denotes the best performance, while the underlined text indicates the second-best performance. ‘N/A’ indicates that the model has limitations preventing it from running on the dataset.

dataset	shot	logreg	knn	TabPFN	FeatLLM	ProtoLLM
arrhythmia	1	<u>72.16±9.09</u>	52.48±0.00	N/A	N/A	<b>72.49±5.24</b>
	2	<u>77.70±3.11</u>	67.01±2.19	N/A	N/A	<b>78.11±4.33</b>
	4	N/A	N/A	N/A	N/A	N/A
	8	N/A	N/A	N/A	N/A	N/A
balance-scale	1	61.32±11.74	57.22±9.56	63.05±11.10	66.63±8.43	<b>69.15±3.60</b>
	2	66.87±10.51	63.85±7.37	<b>78.01±6.46</b>	66.03±2.98	<u>71.26±3.76</u>
	4	75.24±8.31	69.97±3.97	<b>87.37±4.94</b>	<u>78.64±10.76</u>	73.83±4.16
	8	<u>85.87±6.07</u>	74.70±5.08	<b>94.49±2.09</b>	82.32±4.93	76.38±4.03
cmc	1	52.48±6.77	52.13±4.18	<u>54.13±5.52</u>	53.88±5.28	<b>54.39±5.67</b>
	2	54.14±5.47	52.04±4.32	53.84±5.50	<b>56.37±5.84</b>	<u>54.72±4.29</u>
	4	57.04±4.36	56.48±3.35	<b>58.42±2.89</b>	57.14±3.39	<u>57.72±4.22</u>
	8	59.97±4.08	60.03±4.66	<b>61.23±5.00</b>	60.70±4.59	<u>60.92±2.59</u>
colic	1	56.60±17.65	53.92±13.21	58.73±18.66	<b>84.69±5.48</b>	66.28±14.18
	2	53.28±16.85	57.90±13.97	63.21±14.30	<b>82.60±9.69</b>	<u>68.74±14.79</u>
	4	72.91±15.60	72.83±13.81	73.64±11.97	<b>85.12±8.03</b>	<u>77.50±11.11</u>
	8	80.81±15.21	78.24±14.11	<u>81.49±11.80</u>	79.33±7.86	<b>81.57±14.50</b>
credit-g	1	51.34±7.43	50.39±4.00	52.12±6.94	<u>55.40±5.89</u>	<b>61.35±3.29</b>
	2	53.62±4.20	53.33±3.87	54.48±4.79	<u>55.94±1.10</u>	<b>62.25±2.86</b>
	4	56.45±5.59	54.26±4.91	<u>57.66±4.79</u>	57.42±3.10	<b>63.26±2.87</b>
	8	<u>61.09±7.01</u>	56.89±5.62	59.05±5.60	56.60±2.22	<b>64.52±3.28</b>
diabetes	1	57.72±15.43	56.24±9.01	56.95±14.11	<b>80.08±1.31</b>	<u>75.55±3.33</u>
	2	59.88±13.49	59.48±6.89	64.76±10.85	<b>80.28±0.75</b>	<u>75.68±3.61</u>
	4	68.54±9.24	63.70±8.14	70.68±7.86	<b>79.38±1.66</b>	<u>75.76±3.78</u>
	8	67.84±8.24	68.30±5.73	72.98±5.05	<b>80.15±1.35</b>	<u>75.70±4.33</u>
ecoli	1	<b>91.68±5.41</b>	70.13±0.00	<u>86.65±7.32</u>	58.87±0.00	73.74±4.42
	2	<b>92.94±4.76</b>	89.92±6.30	<u>92.00±4.80</u>	N/A	80.87±2.04
	4	N/A	N/A	N/A	N/A	N/A
	8	N/A	N/A	N/A	N/A	N/A
glass	1	70.90±5.99	67.61±3.52	<b>77.71±5.33</b>	N/A	<u>72.86±5.76</u>
	2	75.33±5.12	71.42±5.06	<b>79.91±3.40</b>	N/A	<u>76.08±4.74</u>
	4	<u>79.99±4.13</u>	75.18±4.17	<b>86.12±2.89</b>	N/A	77.25±4.41
	8	<u>83.48±3.58</u>	80.44±4.22	<b>88.48±3.42</b>	N/A	78.45±2.82
haberman	1	53.67±12.02	52.47±8.47	55.39±7.66	64.08±3.79	<b>66.58±6.24</b>
	2	55.57±9.11	53.80±5.59	56.45±7.48	<u>65.77±5.25</u>	<b>66.70±6.10</b>
	4	59.57±11.21	57.74±8.48	58.02±9.69	66.22±5.00	<b>66.58±5.88</b>
	8	62.06±15.10	58.53±10.50	61.61±11.06	<b>68.35±6.51</b>	<u>66.72±6.23</u>
heart-c	1	67.64±12.45	59.58±10.02	70.22±12.77	<u>79.60±5.49</u>	<b>80.96±5.35</b>
	2	73.24±16.29	69.34±10.84	80.43±9.50	<u>83.03±4.91</u>	<b>83.20±4.98</b>
	4	79.14±10.40	73.87±11.46	81.67±9.57	<u>83.28±4.87</u>	<b>84.63±5.70</b>
	8	82.69±5.44	84.04±4.20	84.51±4.17	<u>85.43±4.32</u>	<b>87.09±4.80</b>
lymph	1	<b>86.13±0.74</b>	81.36±3.99	84.61±7.29	<u>85.71±8.53</u>	59.99±9.82
	2	<b>87.64±8.05</b>	<u>83.74±7.79</u>	83.08±10.21	N/A	63.51±8.55
	4	N/A	N/A	N/A	N/A	N/A
	8	N/A	N/A	N/A	N/A	N/A
mushroom	1	80.94±16.42	71.60±12.41	69.07±13.30	<u>89.56±16.20</u>	<b>94.12±2.92</b>
	2	82.49±14.45	78.78±10.94	77.77±12.80	<b>96.01±3.79</b>	<u>94.60±3.77</u>
	4	91.74±5.91	84.83±5.61	88.39±6.49	<b>96.17±2.12</b>	<u>96.03±2.57</u>
	8	95.97±2.29	89.00±2.40	93.21±4.22	<u>96.55±2.07</u>	<b>96.83±1.54</b>
page-blocks	1	<b>84.41±5.07</b>	72.20±10.10	81.44±6.30	81.08±9.35	76.66±7.90
	2	<b>85.32±4.54</b>	77.71±6.30	<u>84.81±6.95</u>	84.64±6.84	79.76±6.16
	4	<u>91.04±3.65</u>	84.56±3.79	<b>92.72±3.22</b>	88.14±10.53	83.70±4.14
	8	93.89±1.92	89.22±2.42	<b>96.76±0.49</b>	<u>93.94±2.47</u>	85.46±3.77
soybean	1	<u>94.31±1.84</u>	82.02±2.62	N/A	N/A	<b>94.44±1.84</b>
	2	<u>96.29±2.12</u>	90.96±1.64	N/A	N/A	<b>97.20±1.04</b>
	4	<u>98.25±0.49</u>	96.18±1.02	N/A	N/A	<b>98.31±0.43</b>
	8	<u>98.60±0.43</u>	97.82±0.93	N/A	N/A	<b>98.70±0.41</b>
tae	1	51.52±8.33	49.14±7.57	52.17±9.03	<b>57.91±6.90</b>	52.20±6.60
	2	53.14±8.22	52.67±8.52	<u>57.37±10.44</u>	<b>61.75±7.81</b>	51.65±8.01
	4	53.32±6.37	52.54±5.24	<b>60.45±6.91</b>	60.21±8.43	53.48±7.61
	8	58.50±7.47	54.00±9.20	<b>65.28±6.92</b>	<u>60.26±3.59</u>	56.66±7.03
tic-tac-toe	1	55.21±5.27	53.65±4.69	48.99±5.30	<b>87.10±6.69</b>	53.05±7.61
	2	56.96±8.39	52.82±5.92	52.00±5.08	<b>75.37±4.64</b>	55.76±7.58
	4	57.67±9.26	54.78±8.04	56.49±5.75	<b>81.11±15.13</b>	<u>59.04±8.91</u>
	8	61.96±8.46	54.47±7.52	59.71±5.22	<b>80.92±14.75</b>	<u>62.50±6.37</u>
vehicle	1	<b>58.68±6.84</b>	55.94±4.45	<u>58.20±6.15</u>	53.50±6.22	56.91±5.81
	2	63.66±7.67	61.92±4.33	<b>68.45±6.12</b>	61.01±5.07	59.51±5.37
	4	<u>72.39±7.58</u>	66.59±3.81	<b>78.25±4.76</b>	N/A	60.88±4.28
	8	<u>82.57±2.72</u>	72.35±2.78	<b>85.92±2.72</b>	N/A	66.05±4.04

Table 2: Results on TabLLM and ProtoLLM with T0 as the Backbone.

Data	Shot	TabLLM	ProtoLLM(T0)
Adult	4	<b>83.57±2.69</b>	64.40±1.63
	8	<b>83.52±4.30</b>	79.98±3.99
	16	83.23±2.45	<b>83.38±4.31</b>
	32	82.60±4.14	<b>84.54±2.19</b>
	64	84.88±0.97	<b>85.30±1.33</b>
Bank	4	<b>62.51±8.95</b>	58.98±8.25
	8	63.19±5.79	<b>64.31±8.52</b>
	16	63.73±6.43	<b>71.23±6.45</b>
	32	66.51±3.92	<b>74.80±4.68</b>
	64	70.83±3.43	<b>78.89±4.25</b>
Blood	4	55.87±13.49	<b>59.61±16.31</b>
	8	<b>66.01±9.25</b>	64.12±9.40
	16	65.14±7.55	<b>70.20±8.74</b>
	32	69.95±3.39	<b>71.53±8.37</b>
	64	70.88±1.58	<b>74.82±5.53</b>
Car	4	<b>85.82±3.65</b>	74.64±3.37
	8	<b>87.43±2.56</b>	75.97±3.28
	16	<b>88.65±2.63</b>	78.22±2.98
	32	<b>89.02±1.50</b>	81.56±2.75
	64	<b>92.18±0.47</b>	85.35±2.57
Credit-g	4	51.90±9.40	<b>52.88±5.99</b>
	8	<b>56.42±12.89</b>	55.60±5.58
	16	60.38±14.03	<b>60.83±6.45</b>
	32	<b>68.64±3.86</b>	59.49±5.03
	64	<b>70.80±4.09</b>	64.69±5.06
Diabetes	4	70.42±3.69	<b>72.13±5.58</b>
	8	64.30±5.88	<b>71.94±7.80</b>
	16	67.34±2.79	<b>76.23±5.93</b>
	32	69.74±4.41	<b>80.14±3.80</b>
	64	71.56±4.55	<b>79.09±3.33</b>
Heart	4	59.74±4.49	<b>73.99±13.82</b>
	8	70.14±7.91	<b>82.40±8.78</b>
	16	81.72±3.92	<b>88.10±3.25</b>
	32	87.43±2.32	<b>89.14±1.96</b>
	64	89.78±2.59	<b>89.81±1.69</b>