

Detailed results for strawberry purée adulteration dataset

Table 1: Performance metrics of CNN-KAN and simple CNN for strawberry purée adulteration dataset. All results are presented as %, except for the standard deviation, which is expressed in percentage points.

Results for CNN-KAN architecture						
	Train dataset			Test dataset		
Trial no	acc.	spec.	rec.	acc.	spec.	rec.
1	96.19	97.72	94.67	92.86	94.54	91.18
2	97.59	98.73	96.45	93.49	96.22	90.76
3	98.1	98.98	97.21	94.75	95.38	94.12
4	96.7	97.46	95.94	92.23	95.8	88.66
5	96.45	98.98	93.91	91.39	96.22	86.55
6	97.46	98.73	96.19	96.64	98.32	94.96
7	97.97	98.98	96.95	95.59	96.22	94.96
8	97.59	98.73	96.45	91.39	94.96	87.82
9	97.72	98.48	96.95	93.91	94.96	92.86
10	97.72	98.48	96.95	94.54	96.22	92.86
Avg.	97.35	98.53	96.17	93.68	95.88	91.47
Std. Dev.	0.7	0.5	1.1	1.8	1.1	3.0

Results for simple CNN architecture						
	Train dataset			Test dataset		
Trial no	acc.	spec.	rec.	acc.	spec.	rec.
1	88.58	85.53	91.62	87.39	89.08	85.71
2	97.97	98.73	97.21	92.44	94.12	90.76
3	96.83	97.97	95.69	92.65	95.8	89.5
4	97.84	97.97	97.72	96.01	97.06	94.96
5	96.95	98.73	95.18	91.39	94.96	87.82
6	94.8	98.22	91.37	91.18	94.54	87.82
7	98.1	98.98	97.21	94.96	95.38	94.54
8	97.21	98.98	95.43	92.44	94.96	89.92
9	97.08	98.48	95.69	93.7	95.8	91.6
10	96.57	98.48	94.67	93.28	97.48	89.08
Avg.	96.19	97.21	95.18	92.54	94.92	90.17
Std. Dev.	2.8	4.1	2.2	2.4	2.3	2.9

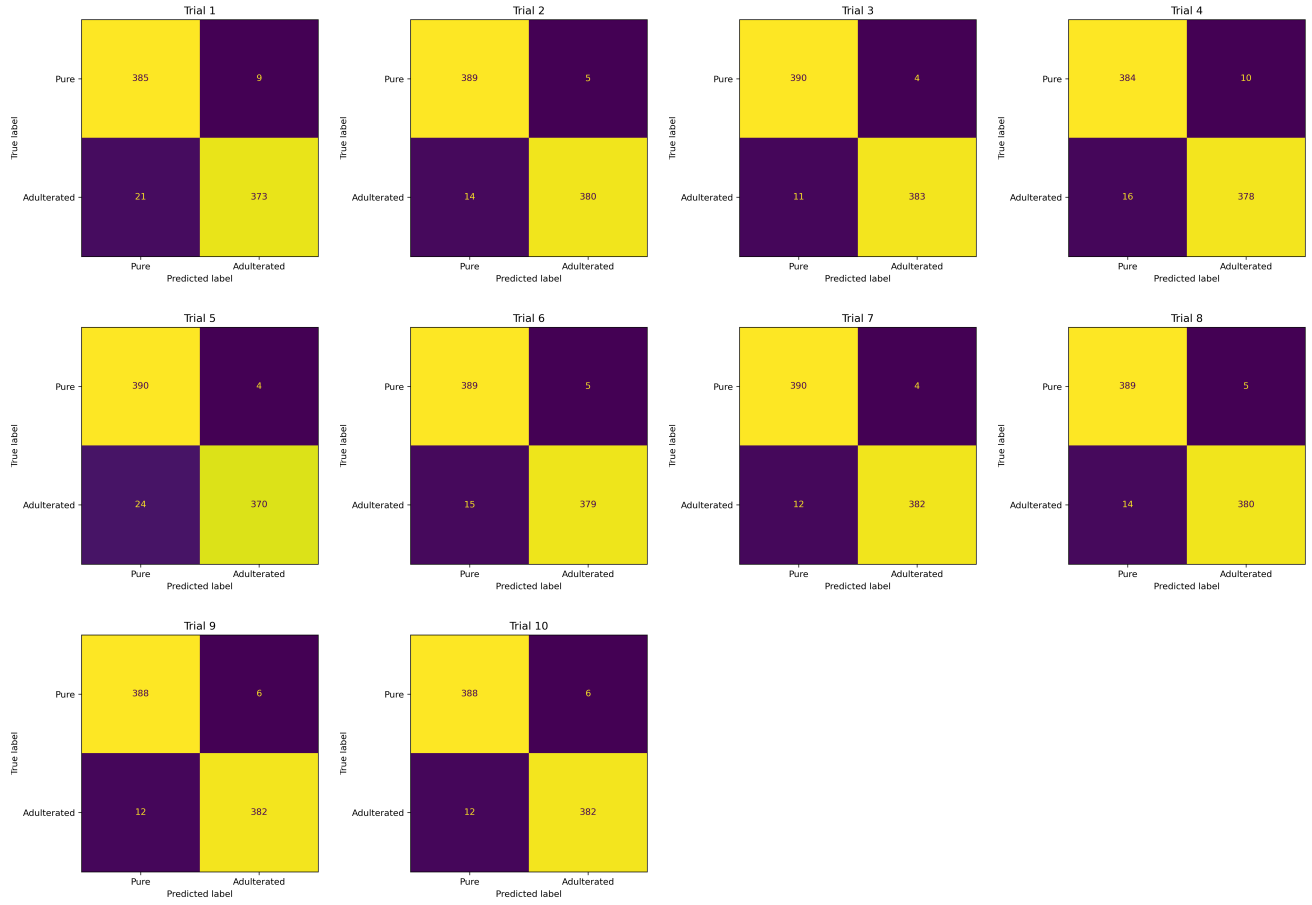


Figure 1: Confusion matrices for the CNN-KAN architecture on the training set.

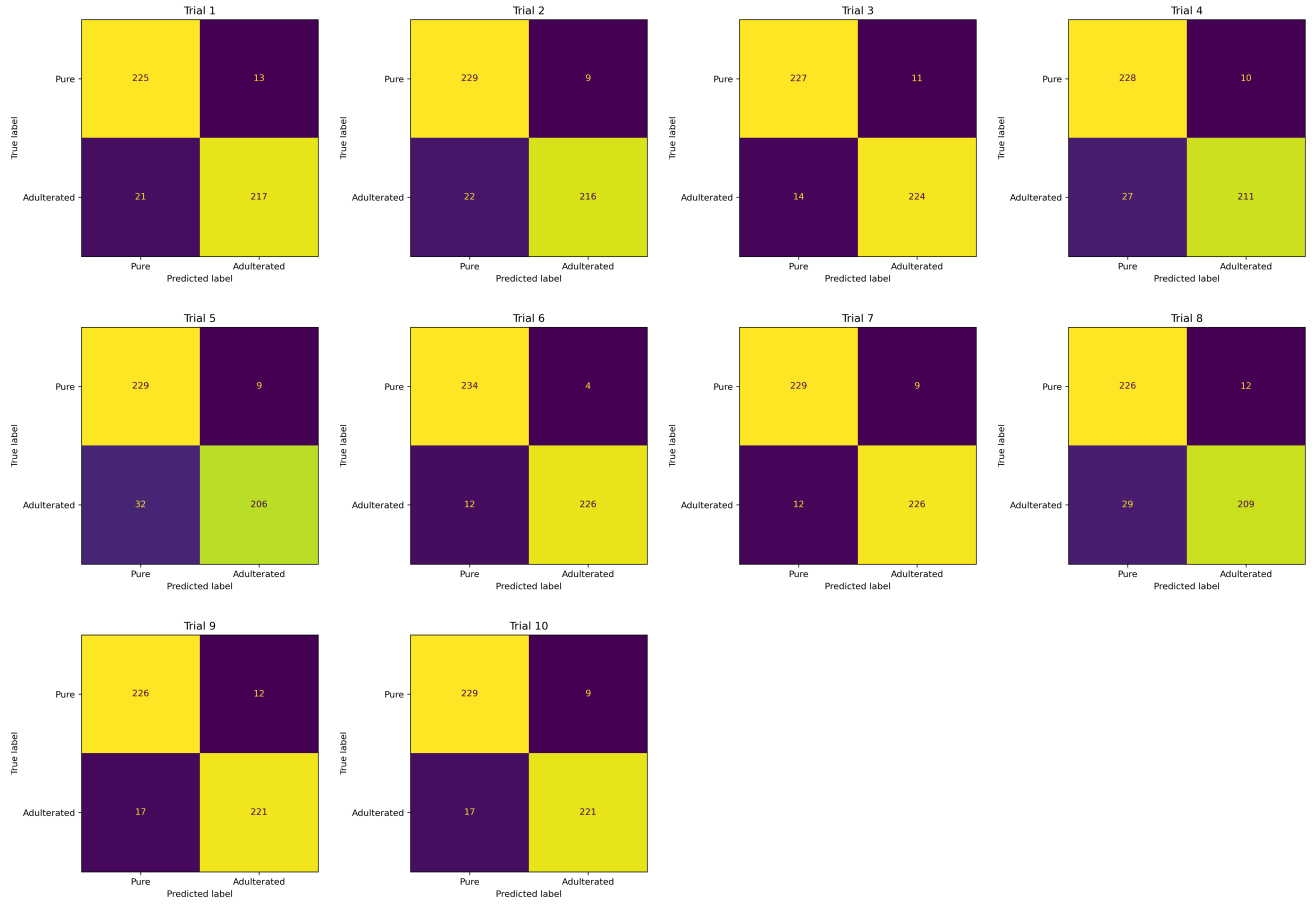


Figure 2: Confusion matrices for the CNN-KAN architecture on the test set.

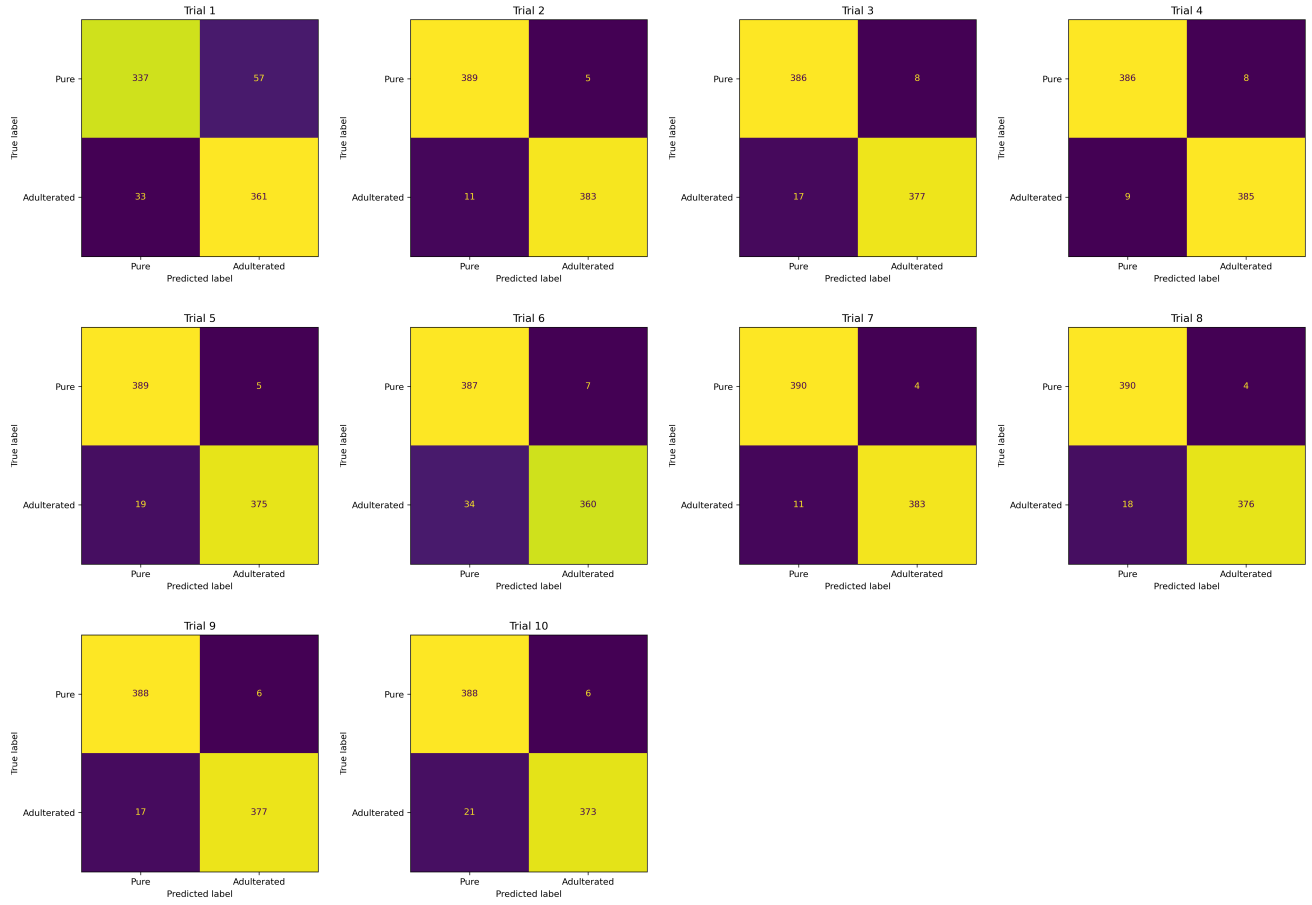


Figure 3: Confusion matrices for the simple CNN architecture on the training set.

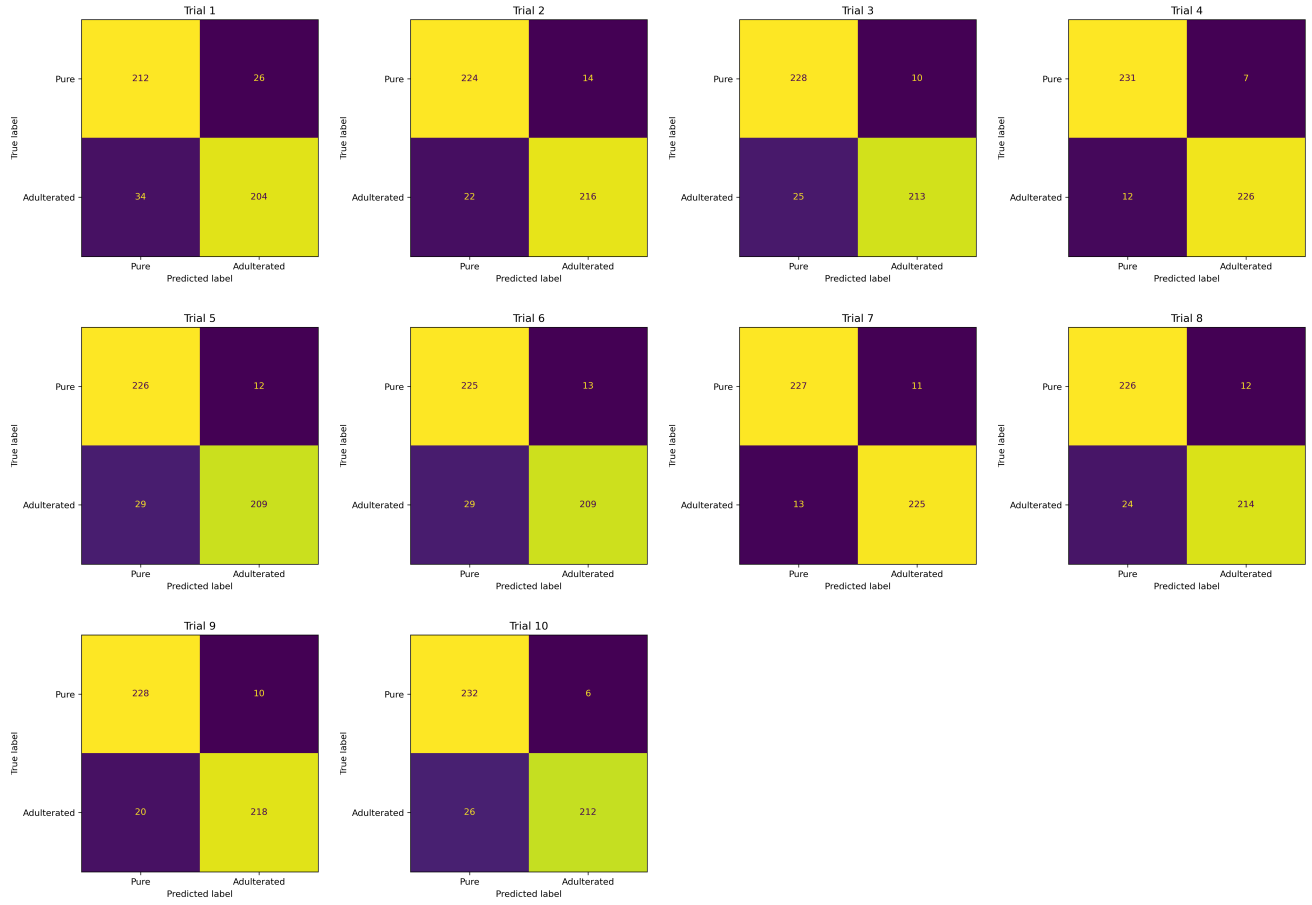


Figure 4: Confusion matrices for the simple CNN architecture on the test set.