

# ENTRENAMIENTO CNN

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# CONTENIDO

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- 2. DATASET UTILIZADO**
- 3. CONFIGURACIONES**

# OBJETIVO

Evaluar el desempeño de una red neuronal convolucional (CNN) entrenada con diferentes configuraciones de parámetros (learning rate, batch size y número de epochs) para identificar cómo estos afectan la precisión y generalización del modelo.



americano



basketball



beisball



boxeo



ciclismo



f1



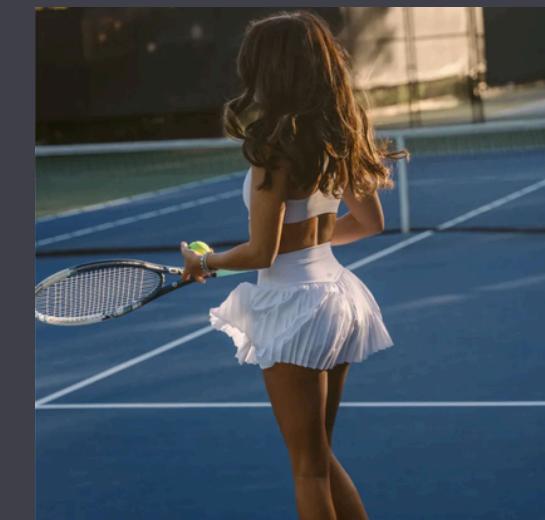
futbol



golf



natacion

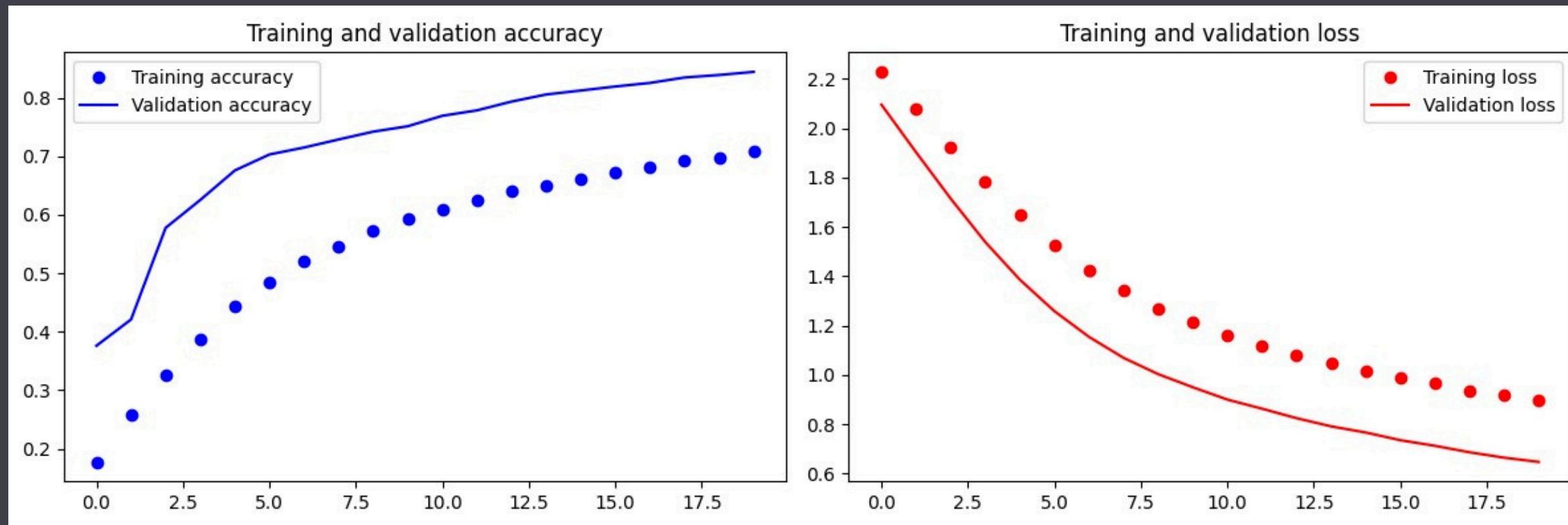


tenis

# RESULTADOS DE LAS DISTINTAS PRUEBAS

	precision	recall	f1-score	support
Class 0	0.67	0.70	0.68	1817
Class 1	0.80	0.87	0.83	1768
Class 2	0.74	0.76	0.75	1509
Class 3	0.84	0.91	0.88	1428
Class 4	0.96	0.98	0.97	1499
Class 5	0.82	0.34	0.48	1070
Class 6	0.93	0.83	0.88	1566
Class 7	0.74	0.88	0.80	1917
Class 8	0.92	0.92	0.92	1049
Class 9	0.98	1.00	0.99	1803
accuracy			0.83	15426
macro avg	0.84	0.82	0.82	15426
weighted avg	0.83	0.83	0.83	15426

# Vuelta 1



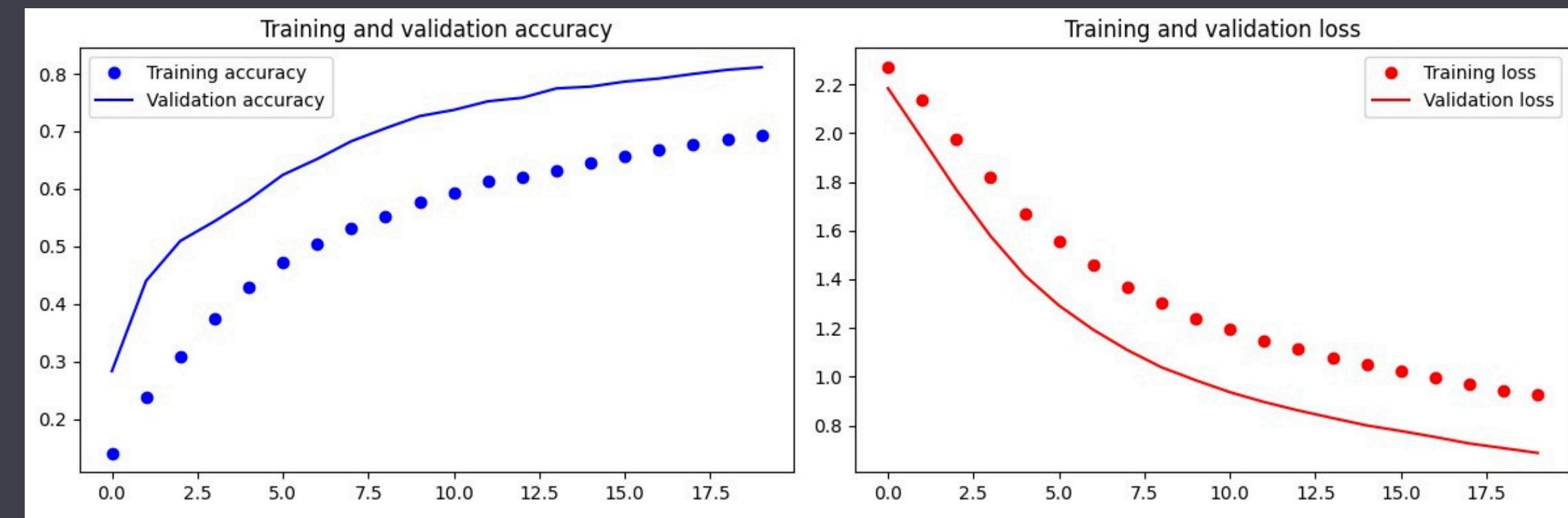
1e-3 Learning Rate

20 Epochs

64 Batch size

	precision	recall	f1-score	support
Class 0	0.61	0.51	0.56	1907
Class 1	0.81	0.90	0.85	1807
Class 2	0.80	0.74	0.77	1569
Class 3	0.89	0.91	0.90	1431
Class 4	0.96	0.99	0.97	1533
Class 5	0.82	0.33	0.47	1029
Class 6	0.90	0.80	0.85	1436
Class 7	0.64	0.92	0.76	1953
Class 8	0.92	0.94	0.93	1000
Class 9	0.97	1.00	0.99	1761
accuracy			0.81	15426
macro avg	0.83	0.80	0.80	15426
weighted avg	0.82	0.81	0.81	15426

# Vuelta 2



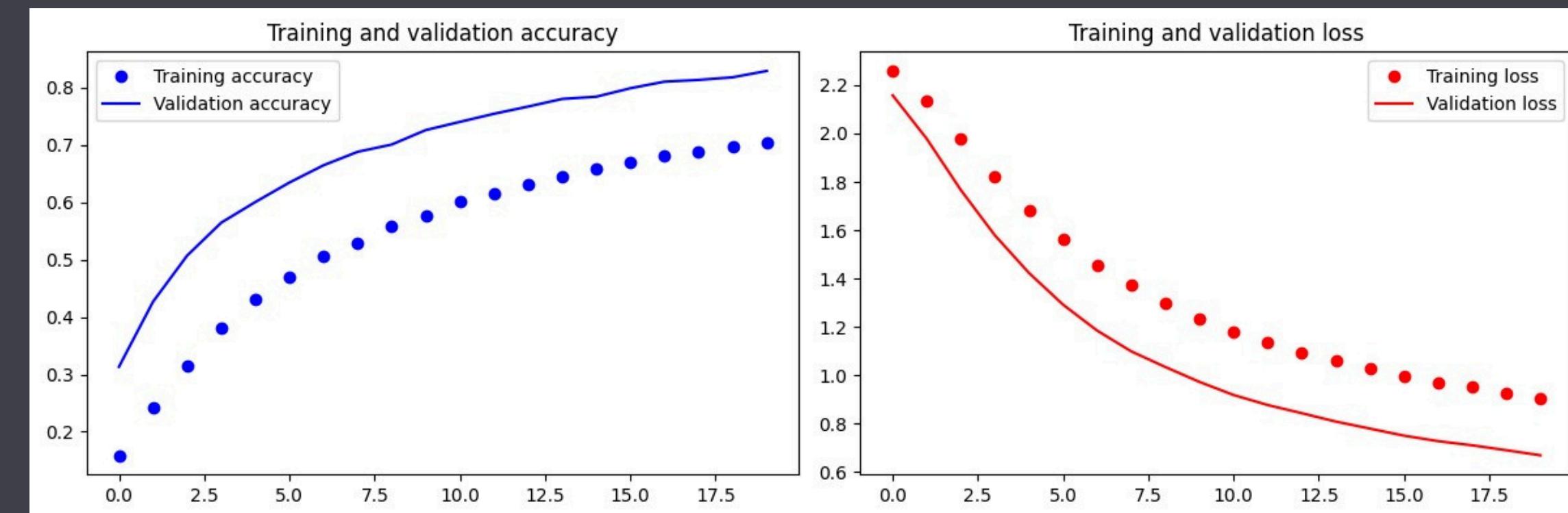
1e-3 Learning Rate

20 Epochs

64 Batch size

	precision	recall	f1-score	support
Class 0	0.71	0.59	0.64	1896
Class 1	0.77	0.88	0.82	1771
Class 2	0.80	0.71	0.75	1517
Class 3	0.86	0.94	0.90	1404
Class 4	0.98	0.99	0.99	1508
Class 5	0.83	0.47	0.60	991
Class 6	0.92	0.86	0.89	1541
Class 7	0.71	0.91	0.80	1930
Class 8	0.92	0.94	0.93	1015
Class 9	0.99	1.00	0.99	1853
accuracy			0.84	15426
macro avg	0.85	0.83	0.83	15426
weighted avg	0.84	0.84	0.83	15426

# Vuelta 3

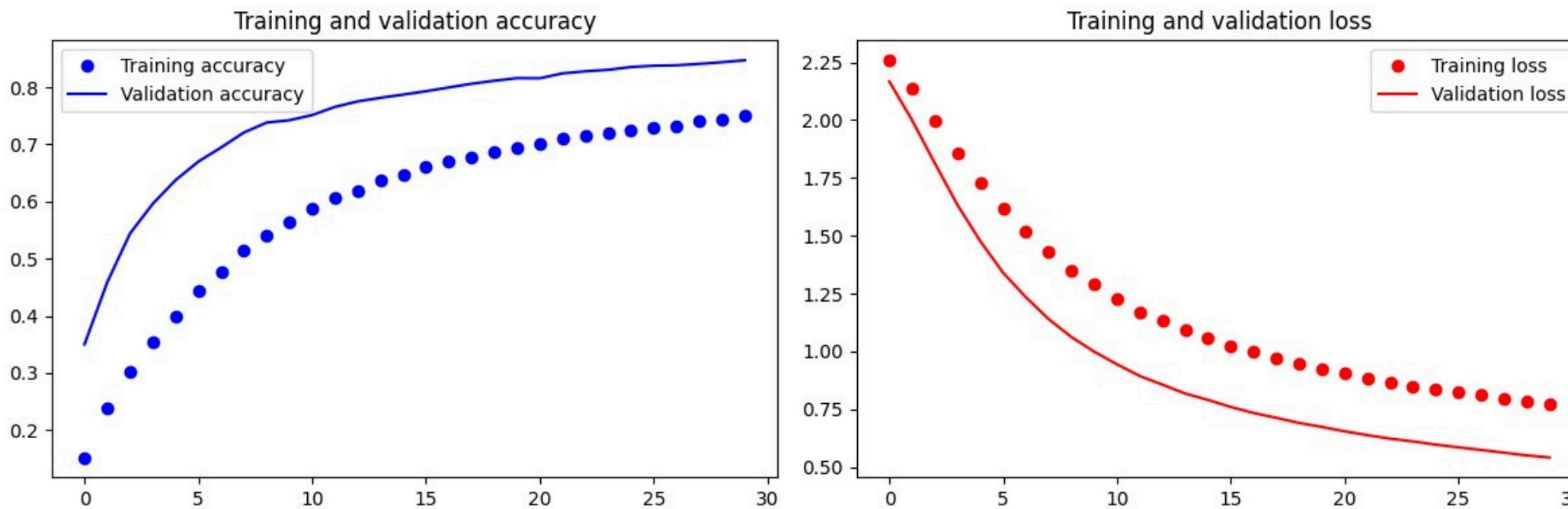


1e-3 Learning Rate

20 Epochs

64 Batch size

	precision	recall	f1-score	support
Class 0	0.64	0.67	0.66	1889
Class 1	0.87	0.90	0.89	1709
Class 2	0.81	0.74	0.78	1559
Class 3	0.88	0.95	0.91	1377
Class 4	0.98	0.99	0.99	1510
Class 5	0.87	0.42	0.56	1025
Class 6	0.94	0.87	0.90	1585
Class 7	0.72	0.88	0.79	1993
Class 8	0.92	0.94	0.93	984
Class 9	0.99	1.00	0.99	1795
accuracy			0.85	15426
macro avg	0.86	0.84	0.84	15426
weighted avg	0.85	0.85	0.84	15426

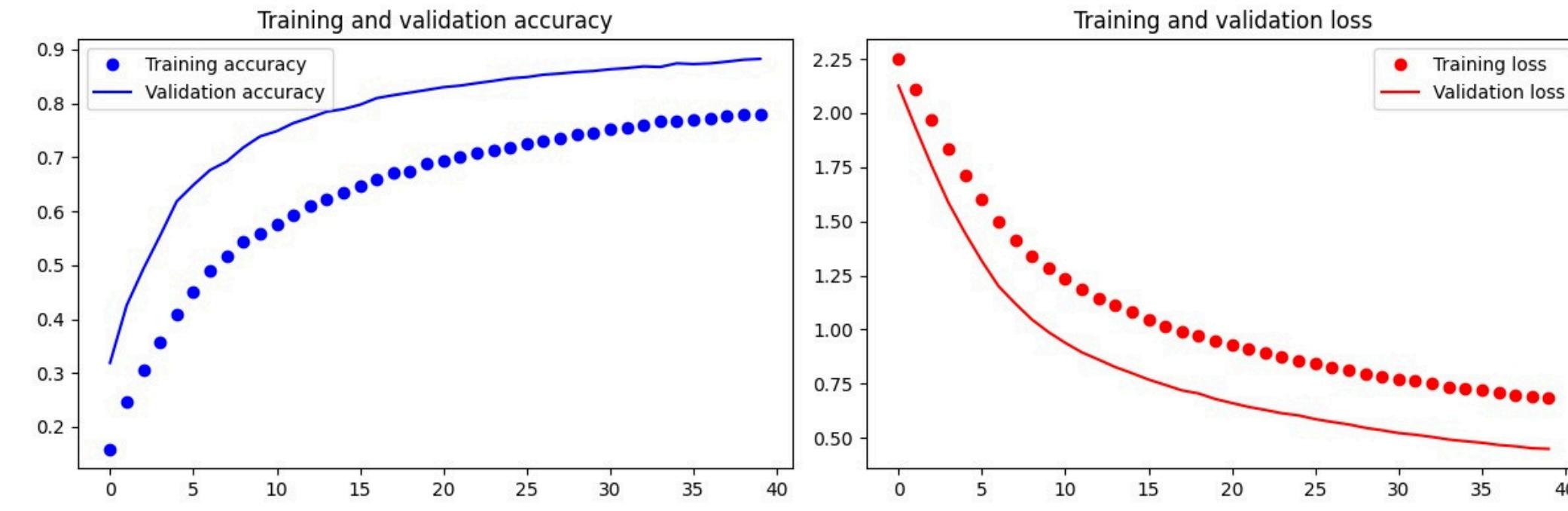


1e-3 Learning Rate

30 Epochs

64 Batch size

	precision	recall	f1-score	support
Class 0	0.72	0.79	0.76	1904
Class 1	0.90	0.91	0.91	1717
Class 2	0.82	0.79	0.80	1573
Class 3	0.93	0.95	0.94	1469
Class 4	0.98	0.99	0.99	1503
Class 5	0.85	0.58	0.69	1021
Class 6	0.97	0.87	0.91	1516
Class 7	0.81	0.91	0.86	1949
Class 8	0.92	0.95	0.94	1045
Class 9	0.99	1.00	1.00	1729
accuracy			0.88	15426
macro avg	0.89	0.87	0.88	15426
weighted avg	0.88	0.88	0.88	15426



1e-3 Learning Rate

40 Epochs

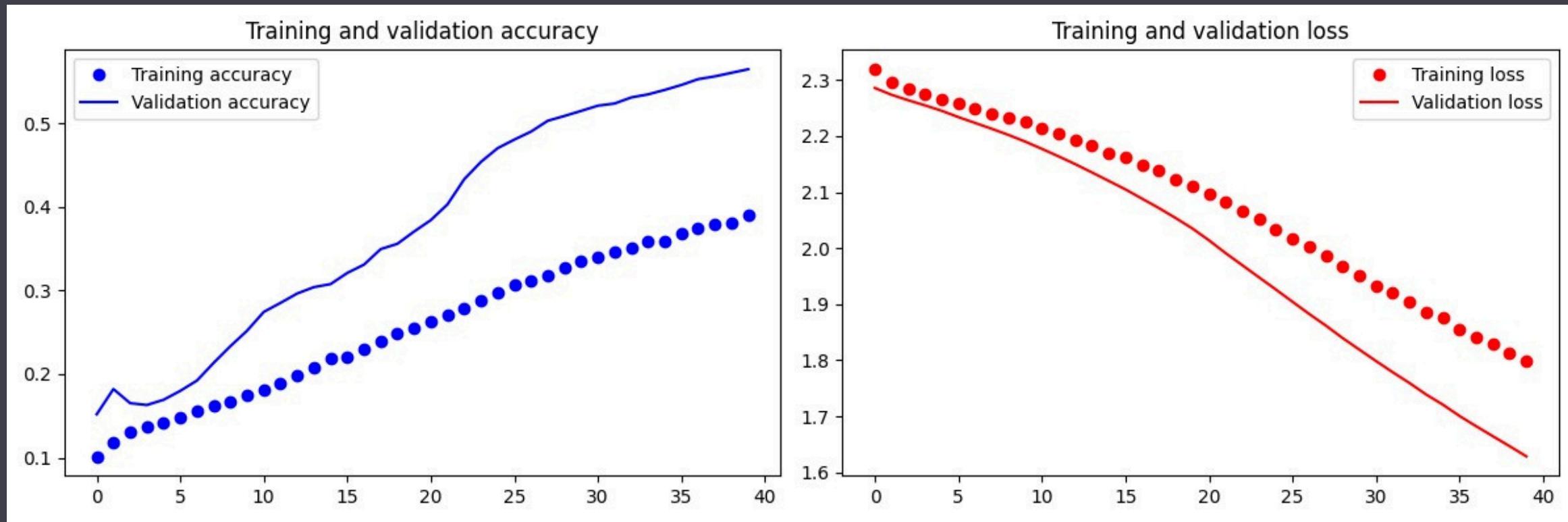
64 Batch size

**1e-4 Learning Rate**

**40 Epochs**

**64 Batch size**

	precision	recall	f1-score	support
Class 0	0.24	0.09	0.13	1865
Class 1	0.41	0.84	0.55	1745
Class 2	0.00	0.00	0.00	1617
Class 3	0.88	0.52	0.66	1451
Class 4	0.87	0.99	0.93	1529
Class 5	0.90	0.02	0.03	1043
Class 6	0.88	0.55	0.68	1416
Class 7	0.37	0.76	0.50	1926
Class 8	0.91	0.66	0.77	1015
Class 9	0.62	1.00	0.76	1819
accuracy			0.56	15426
macro avg	0.61	0.54	0.50	15426
weighted avg	0.56	0.56	0.50	15426

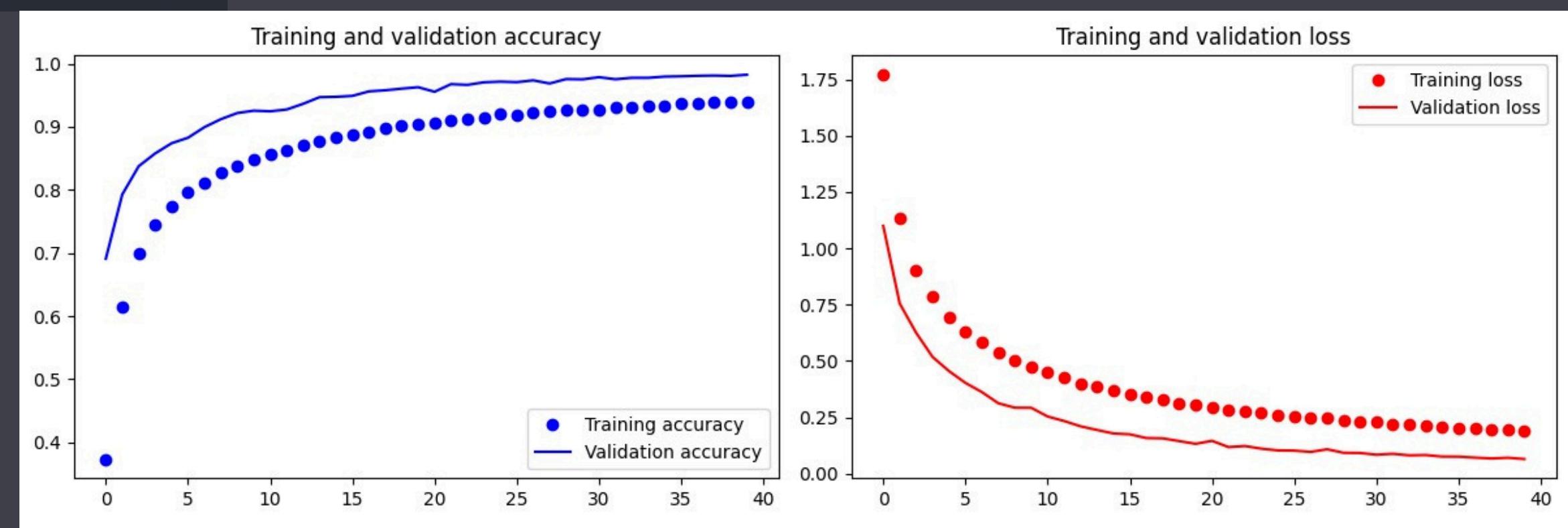


**1e-2 Learning Rate**

**40 Epochs**

**64 Batch size**

	precision	recall	f1-score	support
Class 0	0.96	0.93	0.95	1908
Class 1	0.98	0.98	0.98	1755
Class 2	0.98	0.98	0.98	1567
Class 3	0.98	1.00	0.99	1412
Class 4	1.00	1.00	1.00	1513
Class 5	0.98	0.96	0.97	994
Class 6	1.00	0.99	0.99	1521
Class 7	0.96	0.98	0.97	1987
Class 8	1.00	1.00	1.00	1023
Class 9	1.00	1.00	1.00	1746
accuracy			0.98	15426
macro avg	0.98	0.98	0.98	15426
weighted avg	0.98	0.98	0.98	15426

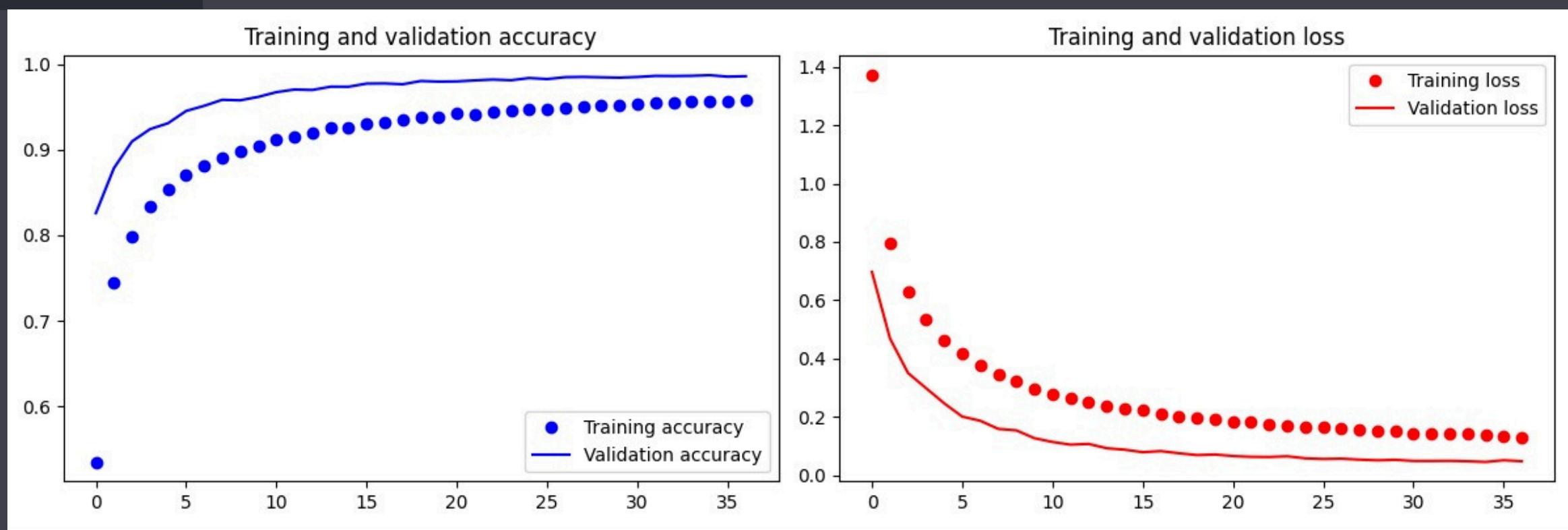


**1e-2 Learning Rate**

**37 Epochs**

**32 Batch size**

	precision	recall	f1-score	support
Class 0	0.96	0.97	0.97	1863
Class 1	0.99	0.98	0.99	1855
Class 2	0.99	0.98	0.99	1540
Class 3	0.99	1.00	0.99	1388
Class 4	1.00	1.00	1.00	1524
Class 5	0.98	0.98	0.98	1024
Class 6	1.00	0.99	0.99	1500
Class 7	0.97	0.99	0.98	1922
Class 8	1.00	1.00	1.00	1020
Class 9	1.00	1.00	1.00	1790
accuracy			0.99	15426
macro avg	0.99	0.99	0.99	15426
weighted avg	0.99	0.99	0.99	15426



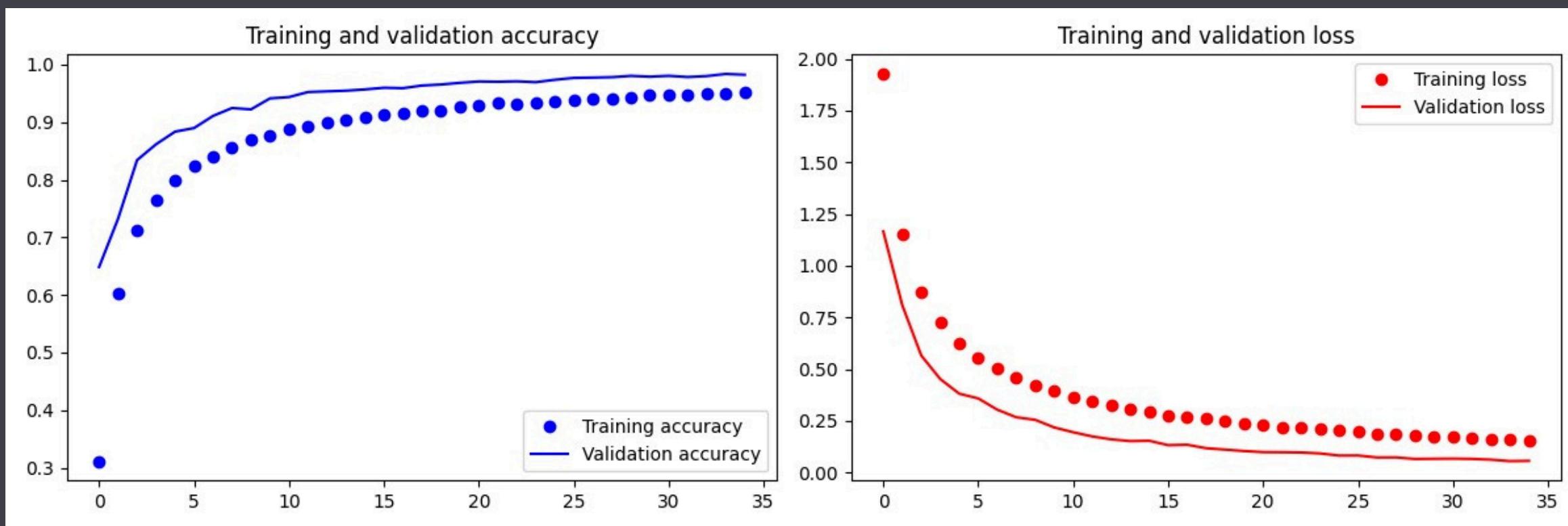
**1e-2 Learning Rate**

**35 Epochs**

**64 Batch size**

**2 Layer**

	precision	recall	f1-score	support
Class 0	0.97	0.93	0.95	1910
Class 1	0.99	0.99	0.99	1717
Class 2	0.95	0.99	0.97	1585
Class 3	0.98	1.00	0.99	1443
Class 4	1.00	1.00	1.00	1471
Class 5	0.99	0.95	0.97	969
Class 6	1.00	0.99	0.99	1555
Class 7	0.97	0.99	0.98	1985
Class 8	0.99	1.00	1.00	1052
Class 9	1.00	1.00	1.00	1739
accuracy			0.98	15426
macro avg	0.98	0.98	0.98	15426
weighted avg	0.98	0.98	0.98	15426



MUCHAS GRACIAS

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