e:/rishita/code/cnnallval.py

Using device: cuda

--- Fold 1 ---

Epoch 1/25 - Train Loss: 0.5580, Train Acc: 0.8469, Val Loss: 0.2228, Val Acc: 0.9115

Epoch 2/25 - Train Loss: 0.2195, Train Acc: 0.9132, Val Loss: 0.2000, Val Acc: 0.9167

Epoch 3/25 - Train Loss: 0.2003, Train Acc: 0.9206, Val Loss: 0.2079, Val Acc: 0.9167

Epoch 4/25 - Train Loss: 0.1865, Train Acc: 0.9274, Val Loss: 0.1783, Val Acc: 0.9259

Epoch 5/25 - Train Loss: 0.1797, Train Acc: 0.9327, Val Loss: 0.1718, Val Acc: 0.9237

Epoch 6/25 - Train Loss: 0.1498, Train Acc: 0.9406, Val Loss: 0.1618, Val Acc: 0.9426

Epoch 7/25 - Train Loss: 0.1670, Train Acc: 0.9356, Val Loss: 0.1740, Val Acc: 0.9330

Epoch 8/25 - Train Loss: 0.1619, Train Acc: 0.9392, Val Loss: 0.1696, Val Acc: 0.9367

Epoch 9/25 - Train Loss: 0.1454, Train Acc: 0.9445, Val Loss: 0.1453, Val Acc: 0.9430

Epoch 10/25 - Train Loss: 0.1360, Train Acc: 0.9492, Val Loss: 0.1254, Val Acc: 0.9548

Epoch 11/25 - Train Loss: 0.1185, Train Acc: 0.9548, Val Loss: 0.1671, Val Acc: 0.9319

Epoch 12/25 - Train Loss: 0.1273, Train Acc: 0.9504, Val Loss: 0.1344, Val Acc: 0.9519

Epoch 13/25 - Train Loss: 0.1171, Train Acc: 0.9546, Val Loss: 0.1187, Val Acc: 0.9489

Epoch 14/25 - Train Loss: 0.1249, Train Acc: 0.9508, Val Loss: 0.1137, Val Acc: 0.9581

Epoch 15/25 - Train Loss: 0.1113, Train Acc: 0.9593, Val Loss: 0.1329, Val Acc: 0.9556

Epoch 16/25 - Train Loss: 0.1060, Train Acc: 0.9618, Val Loss: 0.0966, Val Acc: 0.9633

Epoch 17/25 - Train Loss: 0.0974, Train Acc: 0.9649, Val Loss: 0.1591, Val Acc: 0.9389

Epoch 18/25 - Train Loss: 0.1063, Train Acc: 0.9613, Val Loss: 0.1273, Val Acc: 0.9574

Epoch 19/25 - Train Loss: 0.0932, Train Acc: 0.9663, Val Loss: 0.0984, Val Acc: 0.9693

Epoch 20/25 - Train Loss: 0.0847, Train Acc: 0.9697, Val Loss: 0.0894, Val Acc: 0.9659

Epoch 21/25 - Train Loss: 0.0820, Train Acc: 0.9681, Val Loss: 0.0859, Val Acc: 0.9689

Epoch 22/25 - Train Loss: 0.0763, Train Acc: 0.9728, Val Loss: 0.1026, Val Acc: 0.9644

Epoch 23/25 - Train Loss: 0.0776, Train Acc: 0.9740, Val Loss: 0.0666, Val Acc: 0.9752

Epoch 24/25 - Train Loss: 0.0767, Train Acc: 0.9715, Val Loss: 0.0672, Val Acc: 0.9730

Epoch 25/25 - Train Loss: 0.0786, Train Acc: 0.9711, Val Loss: 0.0877, Val Acc: 0.9696

Fold 1 Metrics:

Accuracy: 0.9696

Precision: 0.9698

Recall: 0.9696

F1-Score: 0.9696

--- Fold 2 ---

Epoch 1/25 - Train Loss: 0.4553, Train Acc: 0.8231, Val Loss: 0.2249, Val Acc: 0.9093

Epoch 2/25 - Train Loss: 0.2498, Train Acc: 0.9019, Val Loss: 0.1720, Val Acc: 0.9278

Epoch 3/25 - Train Loss: 0.2289, Train Acc: 0.9067, Val Loss: 0.1788, Val Acc: 0.9252

Epoch 4/25 - Train Loss: 0.2106, Train Acc: 0.9182, Val Loss: 0.1417, Val Acc: 0.9433

Epoch 5/25 - Train Loss: 0.1919, Train Acc: 0.9277, Val Loss: 0.1346, Val Acc: 0.9470

Epoch 6/25 - Train Loss: 0.1857, Train Acc: 0.9277, Val Loss: 0.1225, Val Acc: 0.9489

Epoch 7/25 - Train Loss: 0.1700, Train Acc: 0.9315, Val Loss: 0.1203, Val Acc: 0.9519

Epoch 8/25 - Train Loss: 0.1598, Train Acc: 0.9364, Val Loss: 0.1074, Val Acc: 0.9526

Epoch 9/25 - Train Loss: 0.1507, Train Acc: 0.9432, Val Loss: 0.2054, Val Acc: 0.9159

Epoch 10/25 - Train Loss: 0.1643, Train Acc: 0.9366, Val Loss: 0.0940, Val Acc: 0.9619

Epoch 11/25 - Train Loss: 0.1405, Train Acc: 0.9446, Val Loss: 0.0939, Val Acc: 0.9600

Epoch 12/25 - Train Loss: 0.1316, Train Acc: 0.9472, Val Loss: 0.0998, Val Acc: 0.9581

Epoch 13/25 - Train Loss: 0.1385, Train Acc: 0.9455, Val Loss: 0.0939, Val Acc: 0.9607

Epoch 14/25 - Train Loss: 0.1392, Train Acc: 0.9448, Val Loss: 0.0932, Val Acc: 0.9615

Epoch 15/25 - Train Loss: 0.1187, Train Acc: 0.9541, Val Loss: 0.0751, Val Acc: 0.9674

Epoch 16/25 - Train Loss: 0.1180, Train Acc: 0.9532, Val Loss: 0.1494, Val Acc: 0.9333

Epoch 17/25 - Train Loss: 0.1071, Train Acc: 0.9564, Val Loss: 0.0863, Val Acc: 0.9604

Epoch 18/25 - Train Loss: 0.1193, Train Acc: 0.9553, Val Loss: 0.0896, Val Acc: 0.9600

Epoch 19/25 - Train Loss: 0.1159, Train Acc: 0.9563, Val Loss: 0.0596, Val Acc: 0.9744

Epoch 20/25 - Train Loss: 0.1093, Train Acc: 0.9577, Val Loss: 0.0601, Val Acc: 0.9756

Epoch 21/25 - Train Loss: 0.1142, Train Acc: 0.9572, Val Loss: 0.0767, Val Acc: 0.9711

Epoch 22/25 - Train Loss: 0.0996, Train Acc: 0.9609, Val Loss: 0.0615, Val Acc: 0.9763

Epoch 23/25 - Train Loss: 0.0975, Train Acc: 0.9637, Val Loss: 0.1220, Val Acc: 0.9519

Epoch 24/25 - Train Loss: 0.0960, Train Acc: 0.9630, Val Loss: 0.0837, Val Acc: 0.9667

Epoch 25/25 - Train Loss: 0.1121, Train Acc: 0.9597, Val Loss: 0.0579, Val Acc: 0.9789

Fold 2 Metrics:

Accuracy: 0.9789

Precision: 0.9789

Recall: 0.9789

F1-Score: 0.9789

--- Fold 3 ---

Epoch 1/25 - Train Loss: 0.4713, Train Acc: 0.8419, Val Loss: 0.2798, Val Acc: 0.8778

Epoch 2/25 - Train Loss: 0.2429, Train Acc: 0.9064, Val Loss: 0.2012, Val Acc: 0.9289

Epoch 3/25 - Train Loss: 0.2172, Train Acc: 0.9135, Val Loss: 0.2173, Val Acc: 0.9078

Epoch 4/25 - Train Loss: 0.1927, Train Acc: 0.9256, Val Loss: 0.1430, Val Acc: 0.9467

Epoch 5/25 - Train Loss: 0.1896, Train Acc: 0.9230, Val Loss: 0.1412, Val Acc: 0.9463

Epoch 6/25 - Train Loss: 0.1808, Train Acc: 0.9262, Val Loss: 0.2005, Val Acc: 0.9159

Epoch 7/25 - Train Loss: 0.1758, Train Acc: 0.9297, Val Loss: 0.1721, Val Acc: 0.9433

Epoch 8/25 - Train Loss: 0.1658, Train Acc: 0.9360, Val Loss: 0.1223, Val Acc: 0.9556

Epoch 9/25 - Train Loss: 0.1487, Train Acc: 0.9389, Val Loss: 0.1162, Val Acc: 0.9578

Epoch 10/25 - Train Loss: 0.1422, Train Acc: 0.9397, Val Loss: 0.1684, Val Acc: 0.9196

Epoch 11/25 - Train Loss: 0.1465, Train Acc: 0.9401, Val Loss: 0.1274, Val Acc: 0.9493

Epoch 12/25 - Train Loss: 0.1267, Train Acc: 0.9479, Val Loss: 0.1245, Val Acc: 0.9585

Epoch 13/25 - Train Loss: 0.1312, Train Acc: 0.9494, Val Loss: 0.0880, Val Acc: 0.9674

Epoch 14/25 - Train Loss: 0.1101, Train Acc: 0.9552, Val Loss: 0.0922, Val Acc: 0.9656

Epoch 15/25 - Train Loss: 0.1196, Train Acc: 0.9531, Val Loss: 0.0826, Val Acc: 0.9681

Epoch 16/25 - Train Loss: 0.1065, Train Acc: 0.9556, Val Loss: 0.0879, Val Acc: 0.9700

Epoch 17/25 - Train Loss: 0.1135, Train Acc: 0.9559, Val Loss: 0.1149, Val Acc: 0.9526

Epoch 18/25 - Train Loss: 0.0995, Train Acc: 0.9604, Val Loss: 0.0952, Val Acc: 0.9704

Epoch 19/25 - Train Loss: 0.1190, Train Acc: 0.9544, Val Loss: 0.0926, Val Acc: 0.9674

Epoch 20/25 - Train Loss: 0.1128, Train Acc: 0.9558, Val Loss: 0.1209, Val Acc: 0.9574

Epoch 21/25 - Train Loss: 0.0935, Train Acc: 0.9615, Val Loss: 0.1043, Val Acc: 0.9585

Epoch 22/25 - Train Loss: 0.0724, Train Acc: 0.9703, Val Loss: 0.0677, Val Acc: 0.9733

Epoch 23/25 - Train Loss: 0.0837, Train Acc: 0.9665, Val Loss: 0.0753, Val Acc: 0.9730

Epoch 24/25 - Train Loss: 0.0991, Train Acc: 0.9662, Val Loss: 0.1049, Val Acc: 0.9630

Epoch 25/25 - Train Loss: 0.0822, Train Acc: 0.9659, Val Loss: 0.0531, Val Acc: 0.9748

Fold 3 Metrics:

Accuracy: 0.9748

Precision: 0.9749

Recall: 0.9748

F1-Score: 0.9748

--- Fold 4 ---

Epoch 1/25 - Train Loss: 0.4716, Train Acc: 0.8352, Val Loss: 0.2228, Val Acc: 0.9085

Epoch 2/25 - Train Loss: 0.2320, Train Acc: 0.9064, Val Loss: 0.1945, Val Acc: 0.9241

Epoch 3/25 - Train Loss: 0.2205, Train Acc: 0.9137, Val Loss: 0.2159, Val Acc: 0.9122

Epoch 4/25 - Train Loss: 0.2150, Train Acc: 0.9168, Val Loss: 0.1858, Val Acc: 0.9322

Epoch 5/25 - Train Loss: 0.1767, Train Acc: 0.9338, Val Loss: 0.1746, Val Acc: 0.9367

Epoch 6/25 - Train Loss: 0.1805, Train Acc: 0.9326, Val Loss: 0.1727, Val Acc: 0.9285

Epoch 7/25 - Train Loss: 0.1592, Train Acc: 0.9399, Val Loss: 0.1428, Val Acc: 0.9463

Epoch 8/25 - Train Loss: 0.1470, Train Acc: 0.9419, Val Loss: 0.1347, Val Acc: 0.9500

Epoch 9/25 - Train Loss: 0.1493, Train Acc: 0.9456, Val Loss: 0.1600, Val Acc: 0.9337

Epoch 10/25 - Train Loss: 0.1642, Train Acc: 0.9360, Val Loss: 0.1359, Val Acc: 0.9444

Epoch 11/25 - Train Loss: 0.1442, Train Acc: 0.9458, Val Loss: 0.1395, Val Acc: 0.9467

Epoch 12/25 - Train Loss: 0.1547, Train Acc: 0.9418, Val Loss: 0.1568, Val Acc: 0.9378

Epoch 13/25 - Train Loss: 0.1307, Train Acc: 0.9500, Val Loss: 0.1155, Val Acc: 0.9515

Epoch 14/25 - Train Loss: 0.1224, Train Acc: 0.9558, Val Loss: 0.1336, Val Acc: 0.9448

Epoch 15/25 - Train Loss: 0.1178, Train Acc: 0.9547, Val Loss: 0.1166, Val Acc: 0.9511

Epoch 16/25 - Train Loss: 0.1148, Train Acc: 0.9557, Val Loss: 0.1137, Val Acc: 0.9570

Epoch 17/25 - Train Loss: 0.1104, Train Acc: 0.9587, Val Loss: 0.1093, Val Acc: 0.9563

Epoch 18/25 - Train Loss: 0.1329, Train Acc: 0.9495, Val Loss: 0.1226, Val Acc: 0.9541

Epoch 19/25 - Train Loss: 0.1168, Train Acc: 0.9556, Val Loss: 0.1330, Val Acc: 0.9489

Epoch 20/25 - Train Loss: 0.1032, Train Acc: 0.9619, Val Loss: 0.1434, Val Acc: 0.9485

Epoch 21/25 - Train Loss: 0.1017, Train Acc: 0.9607, Val Loss: 0.1038, Val Acc: 0.9563

Epoch 22/25 - Train Loss: 0.0894, Train Acc: 0.9681, Val Loss: 0.0849, Val Acc: 0.9678

Epoch 23/25 - Train Loss: 0.0893, Train Acc: 0.9676, Val Loss: 0.0843, Val Acc: 0.9663

Epoch 24/25 - Train Loss: 0.0915, Train Acc: 0.9636, Val Loss: 0.0862, Val Acc: 0.9674

Epoch 25/25 - Train Loss: 0.0889, Train Acc: 0.9651, Val Loss: 0.0766, Val Acc: 0.9711

Fold 4 Metrics:

Accuracy: 0.9711

Precision: 0.9722

Recall: 0.9711

F1-Score: 0.9711

--- Fold 5 ---

Epoch 1/25 - Train Loss: 0.4884, Train Acc: 0.8205, Val Loss: 0.2185, Val Acc: 0.9144

Epoch 2/25 - Train Loss: 0.2337, Train Acc: 0.9095, Val Loss: 0.1997, Val Acc: 0.9211

Epoch 3/25 - Train Loss: 0.2137, Train Acc: 0.9181, Val Loss: 0.1691, Val Acc: 0.9341

Epoch 4/25 - Train Loss: 0.1973, Train Acc: 0.9219, Val Loss: 0.1750, Val Acc: 0.9348

Epoch 5/25 - Train Loss: 0.1954, Train Acc: 0.9226, Val Loss: 0.2022, Val Acc: 0.9126

Epoch 6/25 - Train Loss: 0.1642, Train Acc: 0.9337, Val Loss: 0.1427, Val Acc: 0.9489

Epoch 7/25 - Train Loss: 0.1800, Train Acc: 0.9280, Val Loss: 0.1531, Val Acc: 0.9393

Epoch 8/25 - Train Loss: 0.1433, Train Acc: 0.9434, Val Loss: 0.1260, Val Acc: 0.9530

Epoch 9/25 - Train Loss: 0.1455, Train Acc: 0.9444, Val Loss: 0.1336, Val Acc: 0.9481

Epoch 10/25 - Train Loss: 0.1488, Train Acc: 0.9415, Val Loss: 0.1196, Val Acc: 0.9507

Epoch 11/25 - Train Loss: 0.1257, Train Acc: 0.9530, Val Loss: 0.1021, Val Acc: 0.9593

Epoch 12/25 - Train Loss: 0.1185, Train Acc: 0.9532, Val Loss: 0.1017, Val Acc: 0.9589

Epoch 13/25 - Train Loss: 0.1304, Train Acc: 0.9494, Val Loss: 0.1733, Val Acc: 0.9407

Epoch 14/25 - Train Loss: 0.1270, Train Acc: 0.9510, Val Loss: 0.1261, Val Acc: 0.9467

Epoch 15/25 - Train Loss: 0.1232, Train Acc: 0.9531, Val Loss: 0.1312, Val Acc: 0.9496

Epoch 16/25 - Train Loss: 0.1060, Train Acc: 0.9576, Val Loss: 0.1012, Val Acc: 0.9615

Epoch 17/25 - Train Loss: 0.1022, Train Acc: 0.9591, Val Loss: 0.0936, Val Acc: 0.9622

Epoch 18/25 - Train Loss: 0.1061, Train Acc: 0.9615, Val Loss: 0.0800, Val Acc: 0.9667

Epoch 19/25 - Train Loss: 0.0938, Train Acc: 0.9649, Val Loss: 0.0876, Val Acc: 0.9670

Epoch 20/25 - Train Loss: 0.0990, Train Acc: 0.9632, Val Loss: 0.0847, Val Acc: 0.9681

Epoch 21/25 - Train Loss: 0.0936, Train Acc: 0.9641, Val Loss: 0.1469, Val Acc: 0.9400

Epoch 22/25 - Train Loss: 0.1135, Train Acc: 0.9569, Val Loss: 0.0850, Val Acc: 0.9689

Epoch 23/25 - Train Loss: 0.1003, Train Acc: 0.9644, Val Loss: 0.0972, Val Acc: 0.9637

Epoch 24/25 - Train Loss: 0.0971, Train Acc: 0.9644, Val Loss: 0.0935, Val Acc: 0.9619

Epoch 25/25 - Train Loss: 0.0805, Train Acc: 0.9697, Val Loss: 0.0915, Val Acc: 0.9696

Fold 5 Metrics:

Accuracy: 0.9696

Precision: 0.9701

Recall: 0.9696

F1-Score: 0.9696

Best Model: Fold 2 with Accuracy: 0.9789

PS E:\rishita\code>