Department of Electrical and Computer Engineering
Summer Semester, 2023/2024
Intelligent Systems Lab, ENCS5141

Case Study #3: Comparing Two Network Architectures on the Flowers-102 Dataset

In this assignment, you will compare the performance of two different convolutional neural network architectures on the Flowers-102 dataset. You will train both networks from scratch for several epochs with a batch size of 32, and then evaluate their performance. For each model, you need to test the following setups:

1. **Architecture 1**: Choose and implement a standard CNN architecture (e.g., a simple 5-layer CNN and with some pooling layers). Train this network from scratch using the Flowers-102 dataset.

2. **Architecture 2**: Choose and implement a different CNN architecture (e.g., a deeper or more complex CNN with pooling layers). Train this network from scratch using the same Flowers-102 dataset.

Compare the performance of these two architectures. Evaluate the models using the test set to measure accuracy, precision, recall, and F1 score. Discuss how the differences in architecture (e.g., depth, number of parameters, or design choices) impact the model's performance on the Flowers-102 dataset.

Submissions:
> Submit your work in a Jupyter Notebook (.ipynb) format. You can download the .ipynb file from Google Colab by navigating to the File menu and selecting Download > Download .ipynb. Make sure your notebook contains sufficient markdown cells to explain your procedure and discuss the results. There is no need to submit a separate report; all explanations and discussions should be included within the notebook itself.

Important Notes:
- **Deadline**: Saturday, 24 August 2024 at 11:59 pm. Please submit your case study solution through Ritaj as a reply to this message.
- **Late Submission Policy**: One mark (out of the 45 marks assigned to case studies in the course outline) will be deducted for every day of late submission of the case study report. No submissions will be accepted beyond the third day past the due date.