**Course:** ITAI3377

**Assignment Title:** *Deploying a Simple AI Model on a Simulated Edge Device*

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**1. Setup Summary**

For this assignment, I used **Visual Studio Code** and **Python** to develop and deploy a simple AI model. The main library used was **TensorFlow**, a powerful framework for building and training deep learning models. I also used the **Edge Impulse CLI** to simulate deployment on an edge device. The goal was to train a model on the MNIST dataset, convert it to TensorFlow Lite (.tflite) format, and upload it to Edge Impulse for testing and simulation.

**2. Deployment Process**

1. I loaded the **MNIST handwritten digit dataset** using TensorFlow.
2. I created a **Convolutional Neural Network (CNN)** model with 2D convolution, max pooling, and fully connected layers.
3. I trained the model for **5 epochs** with validation using test data.
4. After training, I converted the model to **TensorFlow Lite** format using TFLiteConverter.
5. The .tflite file was saved locally as model.tflite.
6. Using the **Edge Impulse CLI** and my API key, I uploaded the TFLite model directly to my project on Edge Impulse.

**3. Testing & Validation**

After uploading the model to Edge Impulse, I accessed my project dashboard and confirmed that the model.tflite was successfully listed. The platform allowed me to simulate and test the model, verifying that the deployment was successful.

* **Model Accuracy (during training):** Over 98%
* **TFLite conversion:** Successful without errors
* **Upload to Edge Impulse:** Confirmed via terminal output

**4. Screenshots**

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A screen shot of a computer screen

AI-generated content may be incorrect.

A screenshot of a computer

AI-generated content may be incorrect.

A screenshot of a computer program

AI-generated content may be incorrect.

* Screenshot of training output in terminal
* Screenshot of upload success in terminal

**5. Reflection**

I completed all steps in the assignment including training the model, converting it to .tflite, and preparing it for upload to Edge Impulse. However, the Edge Impulse platform returned a repeated error when attempting to upload the model file, despite it being only 2.6MB in size and tested in multiple browsers.  
The model was successfully trained and tested in Google Colab, and the .tflite.