* **References**:

Deep Learning Project – Handwritten Digit Recognition using Python

Handwritten digit recognition with CNNs

* **Accuracy: 70-80%**
* **Model:**

Neutral Network Model

* **Results**: The left number is the handwriting number, the right number is the prediction number.

|  |  |
| --- | --- |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |

z

* **Libraries:**

OpenCV, numpy, matplotlib, tkinter, PIL, tensorflow

* **Proposed method**:
* Step 1: Add the required libraries and load dataset for the model
* Step 2: Create layers for the model.
* Step 3: Train the model then save the trained model.
* Step 4: Use tkinter library and PIL library to create a drawing window and then save the handwriting number as a image.
* Step 5: Transform the handwriting image to numpy array to calculation before giving the prediction result.

**Lạc Tiến Huy - Hà Anh Tú -Trần Thiện Thanh - Nguyễn Đức Thắng**

**GV: Trần Khải Thiện**

* **Introduction**:

Handwriting recognition is a computer’s ability to recognise and interpret handwritten input. It’s sometimes known as ‘handwritten text recognition’.