User Manual

Prerequisites:

- Create a folder in the same directory as the python program which is called “dataset”.
- Place “snakeData.xlsx” within the “dataset” folder
- Confirm installation of a python interpreter, preferably Python 3.10 or higher
- Confirm installation of packages that were included or install them using:
  - Windows/UNIX Machine:
    - In Command Prompt: “pip3 install x ” where x is the package to install.
  - Linux Machine (Debian-based OS):
    - “sudo apt install python3-x” where x is the package to install
- Packages used by the python program (those not in standard library):
  - “pillow”,
  - “IPython”,
  - “pywt”,
  - “pytorch”,
  - “opencv2”,
  - “numpy”,
  - “pandas”,
  - “matplotlib”,
  - “openpyxl”,
  - “scikit-learn”

Execution:

- After all packages are installed on a python interpreter, using an IDE or IDLE, open the python program.
- At the bottom of the file in the “(__name__ == “__main__”)” section, find where the Classifier class is initialized.
- Create a new variable and set it to be your preferred features to test. For example:
  - X = [“feature1”, “feature2”, “feature3”]
  - Classifier1 = Classifier(X, naïve_bayes_table, data.classifications)
- Execute the program. The naïve bayes table will be processed at runtime along with calculations of the posterior probabilities. The program will then output a classification of the snake species, the binary condition of poisonous or nonpoisonous, the probability in which the given attributes refer to the chosen snake species, and a list of the snake species and the probabilities that the given attributes describe the species.