User Manual for Worm Image Classifier

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1 Introduction

This application allows you to classify microscope images as either **wormed** or **not wormed** using a pre-trained deep learning model. The app runs on Windows with a graphical user interface (GUI).

2 Requirements

2.1 Python Installation

- Download and install Python 3.8 or newer from the official website: `https://www.python.org/downloads/`
- During installation, make sure to check **"Add Python to PATH"**

2.2 Install Required Python Packages

Open the Command Prompt and run:

```
pip install torch torchvision pillow
```

If 'pip' is not recognized, try:

```
python –m pip install torch torchvision pillow
```

2.3 Installing Tkinter

In most cases, **Tkinter is already included** when you install Python on Windows.

To check if tkinter is installed:

1. Open Command Prompt
2. Type:

   ```
   python –m tkinter
   ```

3. A small test window should appear.

If you get an error:

- Reinstall Python from `https://www.python.org/downloads/windows/`
- Make sure you select the **standard Windows installer** that includes 'tkinter'
- Alternatively, use a package manager like 'choco':

```
choco install python
```

3 Running the Application

3.1 Option 1: Double-click the File

1. Rename the script file to `worm_classifier.pyw`
2. Double-click the file. The GUI should appear.
3. If double-click doesn't work:
   - Right-click the file, select **Open with → Choose another app**
   - Select `python.exe` from the Python installation directory
   - Check "Always use this app to open .pyw files"

3.2 Option 2: Use Command Line

1. Open Command Prompt
2. Navigate to the folder where your script is located:
   cd C:\path\to\your\script
3. Run the script:
   python worm_classifier.py

4 Using the App

1. Click the **"Load Image"** button
2. Select a microscope image (`.jpg`, `.png`, etc.)
3. Click **"Classify"** to see the prediction
4. The result will be displayed as either **wormed** or **no_wormed**, along with a probability

5 Troubleshooting

5.1 The App Doesn't Open

Make sure you have installed all required packages and are using Python 3.

5.2 Error: torch not found

Install Torch again:

```
pip install torch torchvision
```

5.3 No Output from Print

If you double-click the '.pyw' version, console 'print()' messages will not appear. To debug, replace:

```
print("Message")
```

with:

```
from tkinter import messagebox
messagebox.showinfo("Debug", "Message")
```

6 Credits

Developed by Alireza Sobhdoost Deep Learning GUI for Worm Detection