

National University of Computer and
Emerging Sciences, Islamabad

FAST School of Computing



Artificial Intelligence Project

AI-Powered Real-Time Game Bot

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Bachelors of Artificial Intelligence

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Requirements

Before you begin, make sure you have:

- ❖ Python 3.7–3.10 (recommended)
- ❖ pip (Python package installer)

Step 1: Project Folder Setup

Following files should be in your project folder:

- ❖ bot.py
- ❖ trained_model.h5
- ❖ data.pkl
- ❖ command.py
- ❖ buttons.py
- ❖ controller.py
- ❖ game_state.py
- ❖ player.py
- ❖ train_model.py (if retraining required)
- ❖ dataset.csv (if retraining required)

Step 2: Install Required Libraries

Open your terminal or command prompt and run the following commands:

- ❖ pip install tensorflow
- ❖ pip install pandas
- ❖ pip install numpy
- ❖ pip install scikit-learn
- ❖ pip install matplotlib
- ❖ pip install joblib

These libraries are required to run program.

Step 3: Model Files

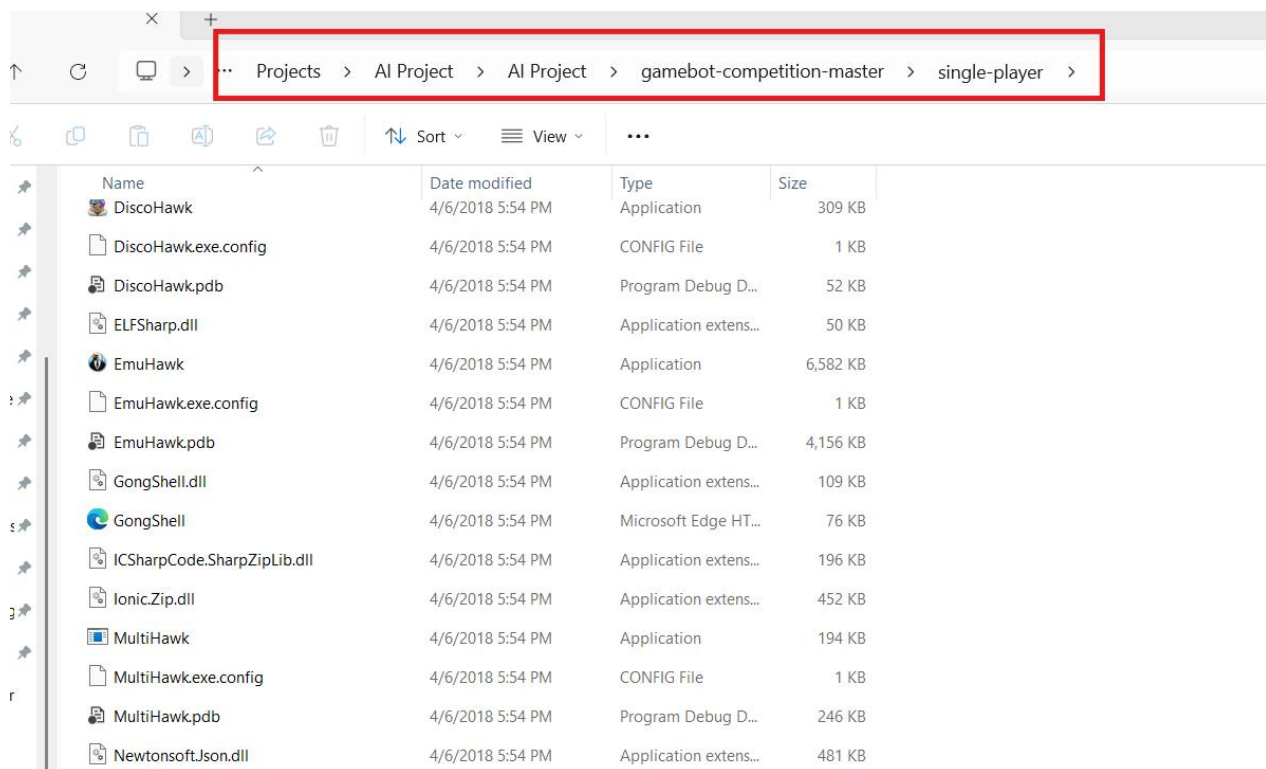
Following pre-trained files should be in your folder:

- ❖ trained_model.h5 (Trained neural network model)
- ❖ data.pkl (StandardScaler object used to normalize input data)

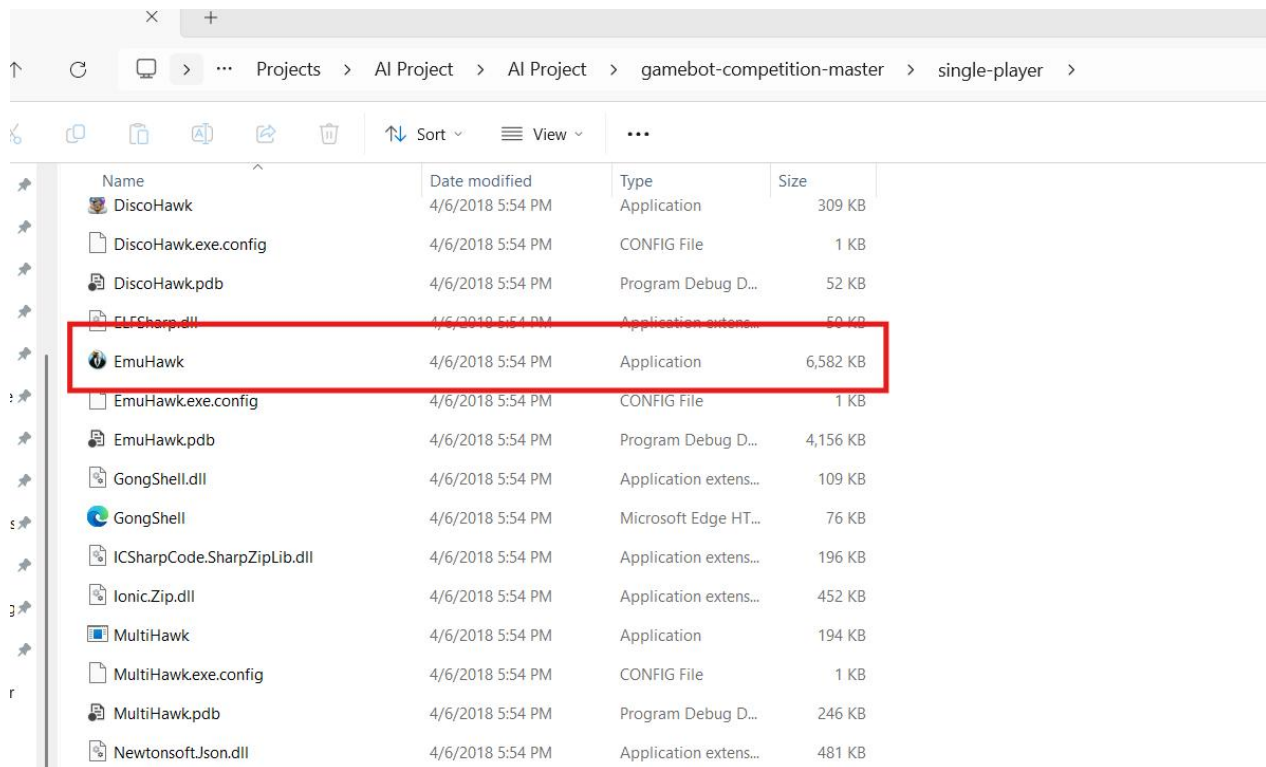
If you don't have these files, you have to retrain the model (see Step 6).

Step 4: Emulator & Game Instructions

1. Open the folder “\AI Project\AI Project\gamebot-competition-master\single-player”



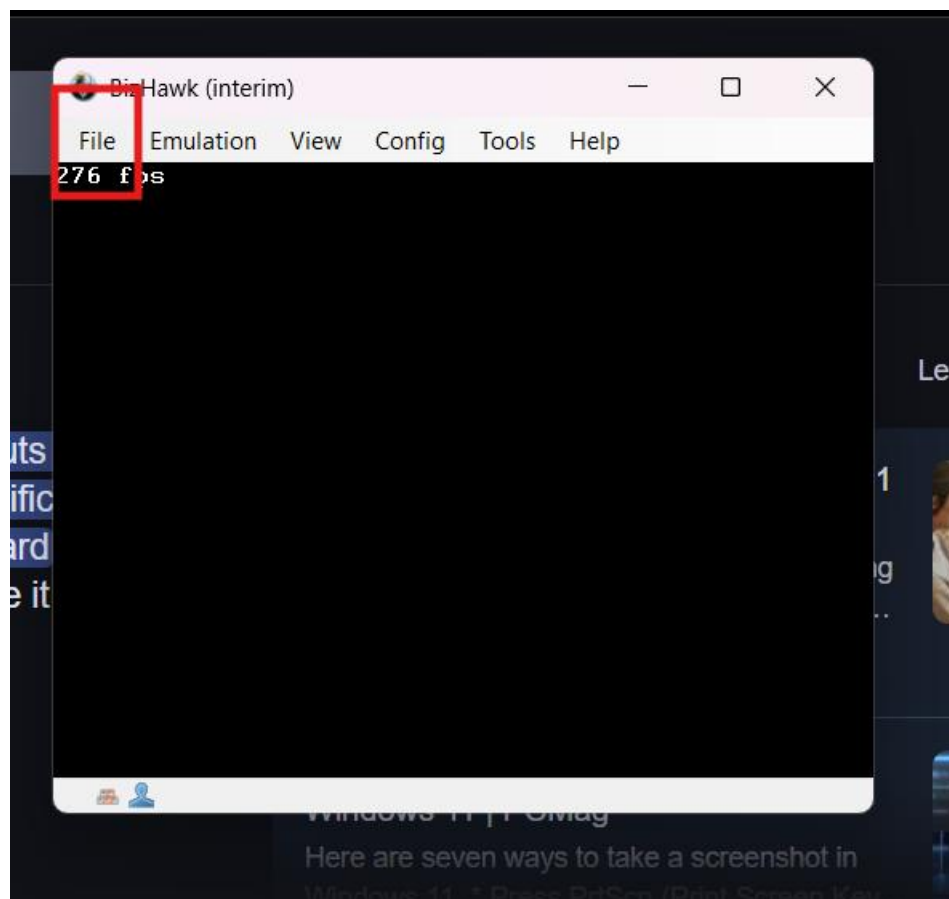
2. Run EmuHawk.exe.



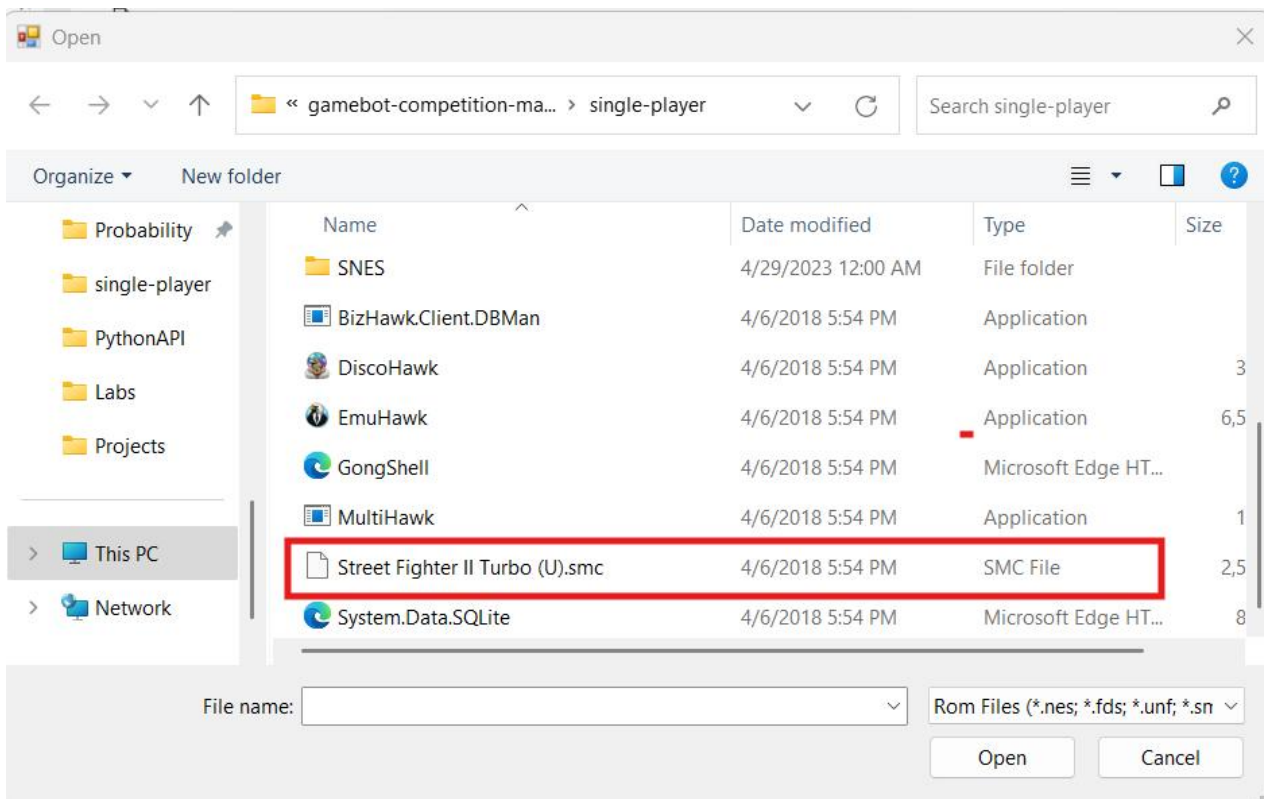
Name	Date modified	Type	Size
DiscoHawk	4/6/2018 5:54 PM	Application	309 KB
DiscoHawk.exe.config	4/6/2018 5:54 PM	CONFIG File	1 KB
DiscoHawk.pdb	4/6/2018 5:54 PM	Program Debug D...	52 KB
ELFSharp.dll	4/6/2018 5:54 PM	Application extens...	59 KB
EmuHawk	4/6/2018 5:54 PM	Application	6,582 KB
EmuHawk.exe.config	4/6/2018 5:54 PM	CONFIG File	1 KB
EmuHawk.pdb	4/6/2018 5:54 PM	Program Debug D...	4,156 KB
GongShell.dll	4/6/2018 5:54 PM	Application extens...	109 KB
GongShell	4/6/2018 5:54 PM	Microsoft Edge HT...	76 KB
ICSharpCode.SharpZipLib.dll	4/6/2018 5:54 PM	Application extens...	196 KB
Ionic.Zip.dll	4/6/2018 5:54 PM	Application extens...	452 KB
MultiHawk	4/6/2018 5:54 PM	Application	194 KB
MultiHawk.exe.config	4/6/2018 5:54 PM	CONFIG File	1 KB
MultiHawk.pdb	4/6/2018 5:54 PM	Program Debug D...	246 KB
Newtonsoft.Json.dll	4/6/2018 5:54 PM	Application extens...	481 KB

In EmuHawk:

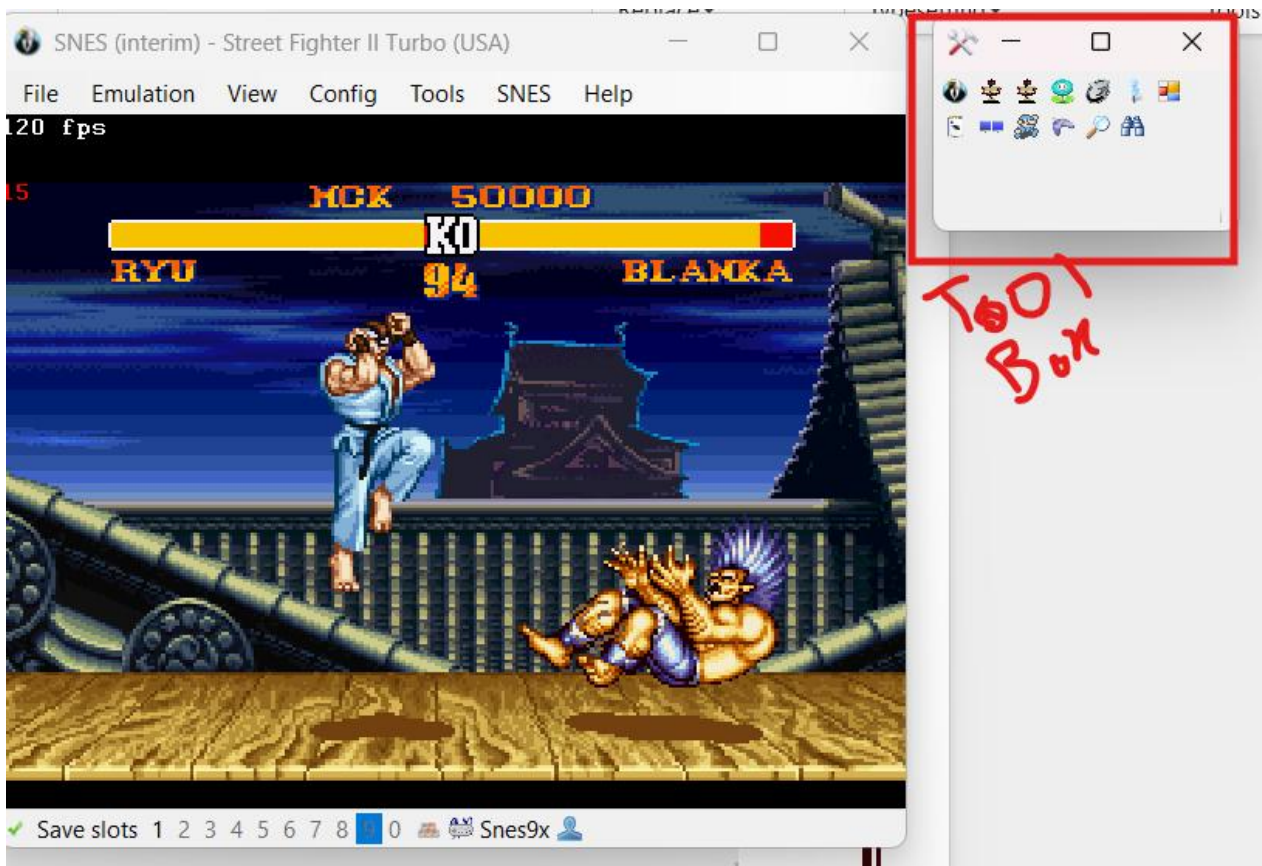
3. Go to File → Open ROM



4. Open Street Fighter II Turbo (U).smc from the single-player folder.



5. Go to Tools → Tool Box (or press Shift+T).

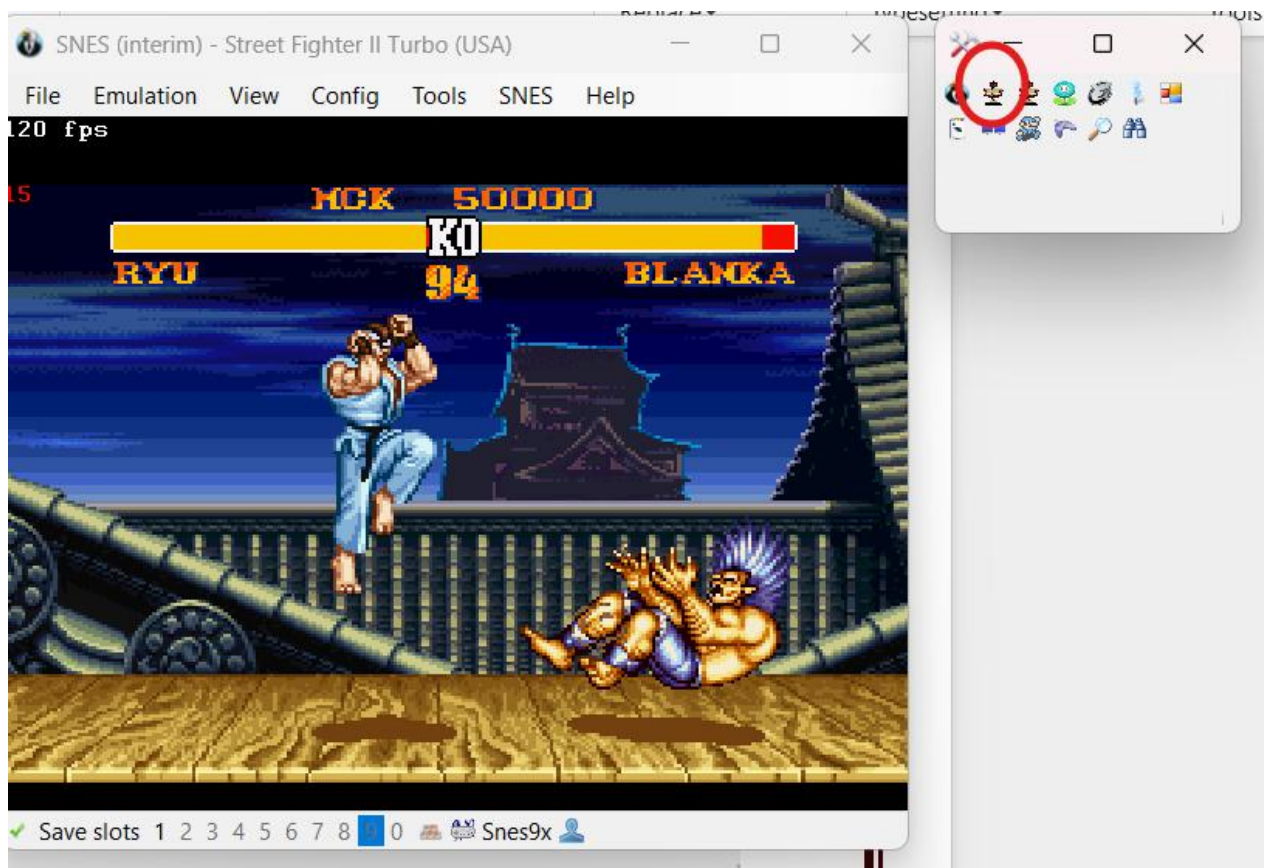


Leave the emulator and tool box windows open.

6. Open Command Prompt or PowerShell in your project directory (“\AI Project\AI Project\gamebot-competition-master\PythonAPI”) and run:

```
python controller.py 1
```

7. Return to the emulator window
8. Press enter on the screen
9. Choose "Normal" mode.
10. Select your character.
11. Click the Gyroscope Bot icon (2nd icon on top row) in Tool Box.



Your bot is active now.

Step 5: Re-Training the Model (Optional)

If you want to retrain the model with your own dataset:

Make sure your dataset.csv file is ready.

And just run the train_model.py

This will generate following 2 files:

trained_model.h5

data.pkl

You can then use these new files in bot.py.