StarCraft Game Outcome Prediction Tool

User Manual

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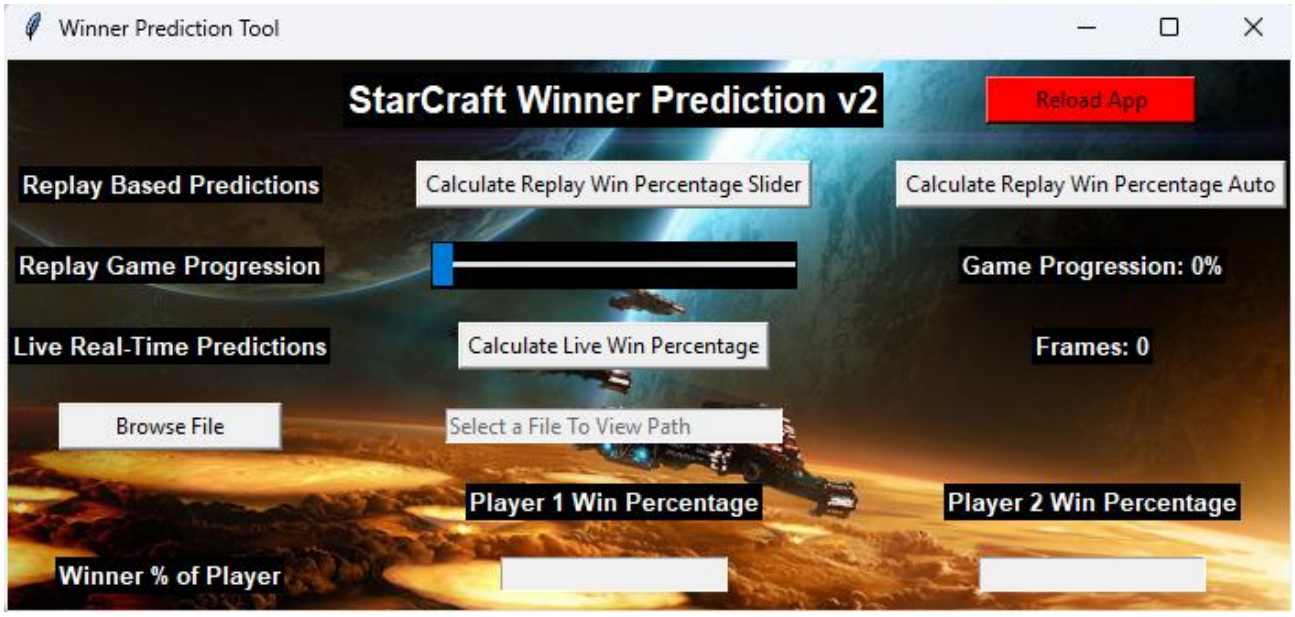

Application developed using **Python** with packages **Tkinter, SkLearn, Pandas** and **Numpy.**

1. Downloading Source Code

To download the project source code and the winner prediction tool codes visit and https://github.com/Abhinav-kk/StarCraft-Game-Outcome-Prediction/tree/main click the green code button and download the zip file or clone the repository.

2. Installing Packages

To install the required packages to run the StarCraft winner prediction tool navigate to Winner Prediction Tool folder and use the following command in terminal.

```
pip install -r requirements.txt
```

3. Running the application

To run the application use the following command

```
python winner-prediction-v2.py
```

4. Configuring BWAPI Script – Refer to Next Section
5. Browse and Choose File

Select the file using the browse csv file button to which the BWAPI script is writing the game states to or choose a csv file which of a game which is already complete. This file is automatically generated when a game is played with the BWAPI script injected. The name of the file starts with map name and ends with '_extracted.csv'.

6. Choose Type of Prediction
    - Calculate Replay Winner Percentage Slider – Can be used for already completed games. To get the prediction at different game progression from 0 to 100% move the slider to the required value and click the `Calculate Replay Win Percentage Slider` Button.
    - Calculate Replay Win Percentage Auto – This can be used if you want to see the win prediction for the whole game as the game progresses from 0 to 100% automatically in already complete game.
    - Calculate Live Win Percentage – This can be used to calculate the win percentage of both players as the game is being played.

BWAPI Configuration

1. Download and Copy `StarWinPredictorModule.dll`

From the repository copy the `StarWinPredictorModule.dll` file to the StarCraft Installation Directory -> bwapi-data -> AI Folder.

2. Configure bwapi.ini file

Open the bwapi.ini folder in bwapi-data folder. Keep the default settings and change the ai_dbg value to the below value:

```
bwapi-data/AI/StarWinPredictorModule.dll
```

Also change the windowed attribute to ON to view the prediction tool and the game at the same time.

```
[ai]
; Paths and revisions for AI
;   - Use commas to specify AI for multiple instances.
;   - If there are more instances than the amount of
;         DLLs specified, then the last entry is used.
;   - Example: SomeAI.dll, SecondInstance.dll, ThirdInstance.dll
;   - Absolute paths are acceptable.
ai     = bwapi-data/AI/ExampleAIModule.dll
ai_dbg = bwapi-data/AI/StarWinPredictorModule.dll
```

```
; windowed = ON | OFF
; This causes BWAPI to enter windowed mode when it is injected.
windowed = ON
```

3. Open Chaoslauncher

Start the game with BWAPI 4.1.2 Injector [DEBUG] enabled.

4. Play Game

Choose Single or Multiplayer and choose Expansion. Play a custom map or any of the included maps and start the game. If you see the below log in the chat means the script is correctly injected.