**TFTBot Project:**

Analysis.

The Problem.

TFT, otherwise known as Team-Fight Tactics is an Auto-Chess, strategy game created by Riot Games and based on the engine that the popular MOBA League of Legends runs on. It is a incredibly complex, strategic game that requires game knowledge, experience and expert teaching to play at a high/ competitive level. Unfortunately, the game itself offers subpar at best tutorials to educate new players on how to play the game. New players are flung blind into the advanced game with little advice or guidance given, leaving them confused and loss during gameplay, hurting the experience, especially when they go up against more experienced players.

The Solution.

I believe that the solution for this is to create a TFT AI that players can play the game against at a configurable difficulty and around the clock. This will allow the players to improve and learn at their own rate, whilst also providing the invaluable opportunity to have an assistant that can assess any situation and provide immediate feedback and guidance on what could be improved on. I believe that the improvement gained from this would be the optimum way to improve at the game, far outweighing other methods such reading guides.

The Stakeholders:

The stakeholders/ target audience for the project will be players of the TFT game who either want to learn it for the first time, or improve their skills at the game, such as Suket Arya. Suket Arya is a new player who has never played Team-Fight Tactics before. He wants to learn to play the game ideally at a quick rate. He is not interested in spending a large quantity of time researching through guides or watching youtube videos, and would ideally like to learn while playing the game.

My solution can offer this and will offer them an invaluable service to improve their ability to play the game at a competitive level, being vastly greater than any readily available method. Expert-guidance, whilst playing, from an already pro level/ highly experienced player would be comparable, yet is not readily/ realistically available for everyone, all the time, unlike my solution.

Existing Solutions: **ADD IMAGES**

There are a few existing solutions available for players learning to play the game, such as reading community-crafted guides or watching videos from Youtubers. However, all pose key flaws that can be solved by my AI. I will evaluate a few of them below.

*Community Made Guides/ Watching Videos:*

This category is a blanket statement for community made content that aims to offer tips and tricks/ advice to improve yourself at TFT. They often offer a good basic level of content for new players, however they all suffer from some shared flaws:

* Can be outdated/ has to be updated:

Any guide risks becoming outdated at the drop of a hat when a new strategy or update is introduced to the game, maybe even risking harming some players’ ability to play the game if they read outdated information.

* Can be low quality/ incorrect:

Many guides can suffer from being incorrect or of low quality, whether due to malicious intent or not. The writer of the guide has to be experienced and willing to spend vast quantities of time creating a quality and accurate guide. If they wilfully make a mistake or not, any errors that are present in their work can harm the thousands of players who may choose to read it.

* Requires the user to search/ discern high quality guides and advice:

The user will have to search for high quality guides, discarding low quality ones and be able to discern high quality ones from low quality ones.

*Programs offering certain builds/ meta advice:*

There are certain programs you can download that will give you raw information about the game and current “meta” (most effective tactic available, so the best strategy available at the time, which often times its constantly updating).

* No adaptation

These programs do offer assistance and help formulate a strategy before the game, however, once in the game, they offer little to no guidance and cannot help you adapt to the game situation that may make your plan completely obsolete and untenable. Furthermore, because they do not gauge any information from the current game-state, some advice they offer could be incredibly and hopelessly incorrect and even do more harm than good if followed.

* Similar to community guides

They also offer no information that isn’t gainable with a quick internet search. Thus, these programs also share many of the short-fallings of community made guides, where the program has to be certain it is giving good advice and can risk giving incorrect or outdated guidance occasionally.

The final issue that can befall these two methods of learning the game is where the general consensus for how the game should be played is incorrect. Taking chess, for instance, the usage of chess AI which played the game to a level not seen before reinvented the game and changed the way many looked at the game. Following community guides or meta builds risk learning the game an incorrect way.

Why our method fixes these problems

Need for Computational Method.

The problem at hand is uniquely suited to being solved by a computational methodology. My solution can be split into two sections, the initial recreation of the game and then the creation of an AI to run on said game.

The initial creation of the game is suited to computational methodology thanks to the abstraction that can be used. The original TFT game is an abstraction of real life, not simulating things they don’t deem relevant to the game, such as not simulating gravity or jumping, accurate collisions, light rays and using other simplifications, such as only allowing units to move from one grid tile to the next and only allowing one unit to possess a grid tile at once. My recreation will use further abstraction, only including the parts relevant to the simulation of the gameplay, thus discarding features such as the GUI and cosmetics, as an AI has no use for it.

My recreation/ TFT is suited for computational methodology in other ways as well. Pattern recognition, other parts.

The second section, the AI, is also suited to computational methodology