# PROJECT PROJEC



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I'm Rachel, an undergraduate computer science student currently based in Pittsburgh.

My career interests include software design and engineering, machine learning and AI, and game development.

Thanks for taking the time to look over my portfolio!

# GAME OF LIFE

Simple Cellular Automaton Simulation github.com/racheljayi/GameOfLife

Based on <u>Conway's Game of Life</u>, this project is a simulation of a grid of cells that evolve, reproduce, and die based on certain rules. I modified the original rules of the simulation to account for lifespan and decay over time. This model can take many different configurations of my rules, which in turn affect the patterns that can be observed.

In the future, I anticipate using this model as a basis for a multi-player game where the goal is to "devour" the other player's cells or "conquer" the entire board.

Tech Stack: C++

```
31122..231.1.23331..3111.
132.312.32131313.1.11.321
11...2..23221.111..121311
23.113211131.32.312.2.12.
113.12112.13133223...12.3
.1222212.313.312321.2.332
.233231.12321222..222232.
```

A random inital population

Over time, the cells split into two distinct clusters that iterate over similar patterns

# TINY SHADOWS

Platformer Game made in Godot 4 github.com/racheljayi/TinyShadows







Tiny Shadows is a 2D, 2-player platformer game around 10 minutes long. It was developed in the <u>Godot 4</u> engine for the <u>2023 GMTK Game Jam</u>.

As this was a solo project, my responsibilities included:

- Art design & animation
- Gameplay development & design

A feature I would love to highlight is the multi-target camera used in this game, which allows for both players to always remain on-screen without the use of split-screen through dynamic zooming.

Tech Stack: Godot 4 Engine (GDScript)

## HUDDLEUP

Social Media Web Application github.com/amb10/huddleUp



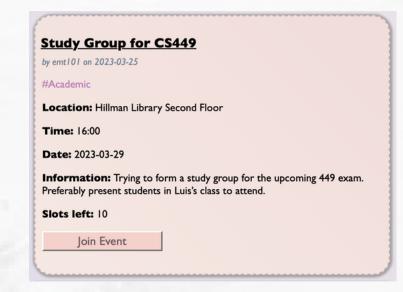
### SteelHacks 2023 Project



huddleUp is a Flask webApp that allows users to post and sign up for events and activities. It was made with college students in mind as a way for students to easily find and join events on campus.

I worked solely on the backend within our team of four. The features I was responsible for include:

- Joining events
- Post tagging and filtering
- Post updates & deletions



Tech Stack: Python, Flask, SQL

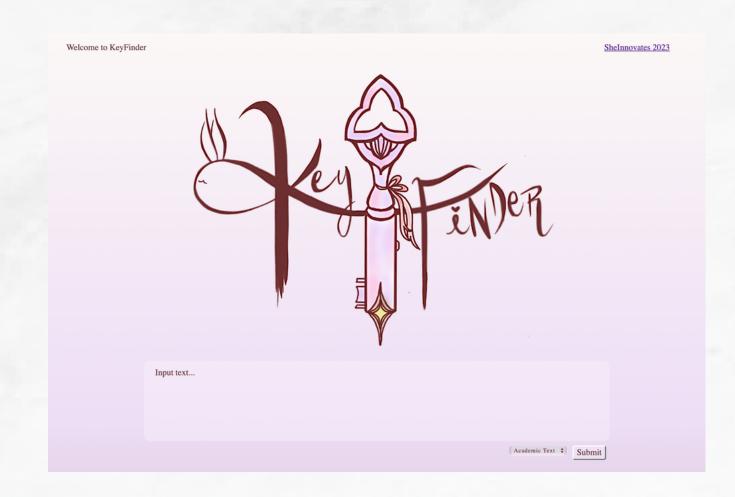
### Shelnnovates 2023 Project

KeyFinder is a full-stack Flask webApp that identifies key vocabulary and creates flashcards for the user. It was created as a solo project for the SheInnovates 2023 Hackathon.

KeyFinder uses the <u>ChatGPT API</u> to identify keywords in the text. Then, it utilizes the Google Knowledge Bank Search API to find definitions for the given list of keywords.

KeyFinder was built as a study tool for students and tested specifically on passages from my roommate's biology textbook. However, it can also be prompted to read from literary texts or articles.

Tech Stack: Python, Flask





# KEYFINDER

Social Media Web Application github.com/racheljayi/KeyFinder

Blue Top Lane:  Alistar  Alistar  Red Top Lane:  Red Jungle Lane:  Red Jungle Lane:  Red Mid Lane:  Red Mid Lane:  Ahri  Corki  Red Bot Lane:  Lucian  Red Bot Lane:  Red Support:	Riotcreche			
Alistar   Aatrox   Red Jungle Lane:  Red Jungle Lane:  Lillia   Red Mid Lane:  Red Mid Lane:  Ahri   Corki   Red Bot Lane:  Lucian   Red Support:  Red Support:  Nami   Aatrox    Aatrox    Aatrox    Red Adarox    Adarox    Adarox    Adarox    Adarox    Adarox    Adarox    Adarox    Adarox    Prediction is a Red-side victory	Please select your champs	;		
Blue Jungle Lane:  Akali  This is a Red Jungle Lane:  Lillia  Red Mid Lane:  Red Mid Lane:  Corki  Red Bot Lane:  Lucian  Red Bot Lane:  Lucian  Red Support:  Red Support:  Nami  Aatrox  Make Prediction  Prediction is a Red-side victory	Blue Top Lane:		Red Top Lane:	
Akali	Alistar	•	Aatrox	•
Blue Mid Lane:  Ahri  Corki  Red Mid Lane:  Red Bot Lane:  Lucian  Caitlyn  Red Support:  Red Support:  Nami  Aatrox  Make Prediction  Prediction is a Red-side victory	Blue Jungle Lane:		Red Jungle Lane:	
Ahri	Akali	•	Lillia	•
Blue Bot Lane:  Lucian  Caitlyn  Red Support:  Red Support:  Nami  Aatrox  Make Prediction  Prediction is a Red-side victory	Blue Mid Lane:		Red Mid Lane:	
Lucian	Ahri	•	Corki	•
Blue Support:  Nami  Aatrox  Make Prediction  Prediction is a Red-side victory	Blue Bot Lane:		Red Bot Lane:	
Nami • Aatrox • Prediction  Prediction is a Red-side victory	Lucian	•	Caitlyn	*
Make Prediction  Prediction is a Red-side victory	Blue Support:		Red Support:	
Prediction is a Red-side victory	Nami	•	Aatrox	•
	Make Prediction			
GG!	Prediction is a Red-side victory			
	GG!			

The Python web-application interface for the model, when run locally, is shown above

# RIOTCRECHE

Python Machine Learning Model github.com/racheljayi/RiotCreche

Simplistic model that cleans web-scraped data from a game analytics site and builds a random-forest classifier to predict a game outcome.

This model is not very accurate as League of Legends has a constantly changing meta and varying factors beyond team composition. But, it was a fun exercise for me nonetheless and allowed me to practice manipulating data, working with large datasets, and using Python frameworks for game data analytics.

Tech Stack: Python, NumPy, PANDAS, scikit-learn



# LET'S CONNECT

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