



WaveStyled

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Team Name: *Waves INC*

- Matthew Daxner - Product Owner
- Sanjay Shrikanth - Initial SCRUM master
- Griffen Shu - Developer
- Dhatchi Govindarajan - Developer
- Arka Pal - Developer

WaveStyled

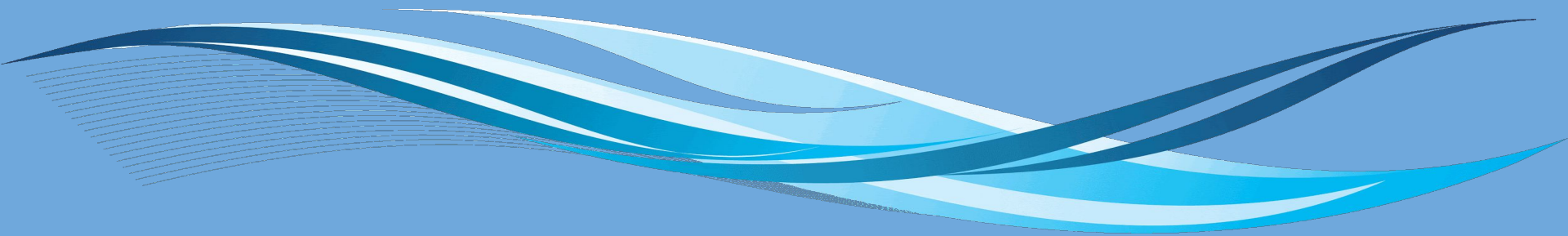
- Main Idea:

Given the available clothes in my wardrobe, what should I wear today?

- For people who ...

Have trouble deciding what to wear for a specific occasion or weather

Want to switch it up and discover outfit combinations that haven't been tried yet



Project Scope(High Level Goals)



- Be able to take input from user and add clothing item to the wardrobe
- Be able to remember a user's wardrobe
- Be able to recommend outfits based on user wardrobe, weather & occasion
- Easy-to-use UI so entering information is efficient and appealing
- Be able to learn a user's preferences and apply to the recommendation

Sprint 1

- User Stories:

“As a user I want to be able to add items from my actual wardrobe to my virtual wardrobe so that I can easily visualize everything I own”

“As a user, I want my wardrobe to be saved when I close the app so that I do not need to re-enter it whenever I reboot the app”

- Spikes:

Research React Native(minimal experience)

- Infrastructure tasks:

Setting up Github repos

Shared Drive folders

Downloading software and necessary libraries (XCode, Postgres)

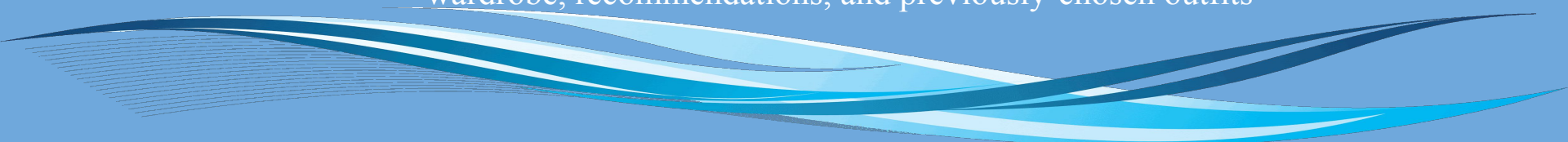


Sprint 2

- User Stories

“As a user I want to see my recommended fits so that I can easily choose (or not) my outfit for the specified weather occasion”

“As a user I want a well-designed user-interface so that I can easily navigate through my wardrobe, recommendations, and previously-chosen outfits”

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- Spikes:

Further research into React Native Development

- Infrastructure tasks:

Functioning Server to facilitate dataflow and ensure consistency (to return fits to user)

Data collection for testing purposes

Sprint 3



- User Stories

“As a user I want to be able to calibrate the recommendation model so that it gives me outfits that fit my preference and learns what I like to wear for future recommendations”

- Spikes

Explore Machine learning models and research

- Infrastructure Tasks

Setup Machine Learning Libraries

Sprint 4

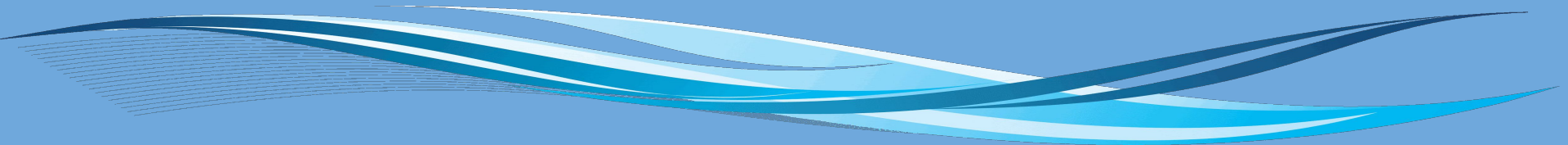
- User Stories

“As a user I want to be able to submit a picture of my clothing item so that when I receive a recommendation, I can easily identify which piece of clothing it is referred to and clearly visualize my outfit right on my phone screen”

“As a user, I want to be able to have multiple tuned-wardrobes so that I can have different recommendations for different sets of clothes”

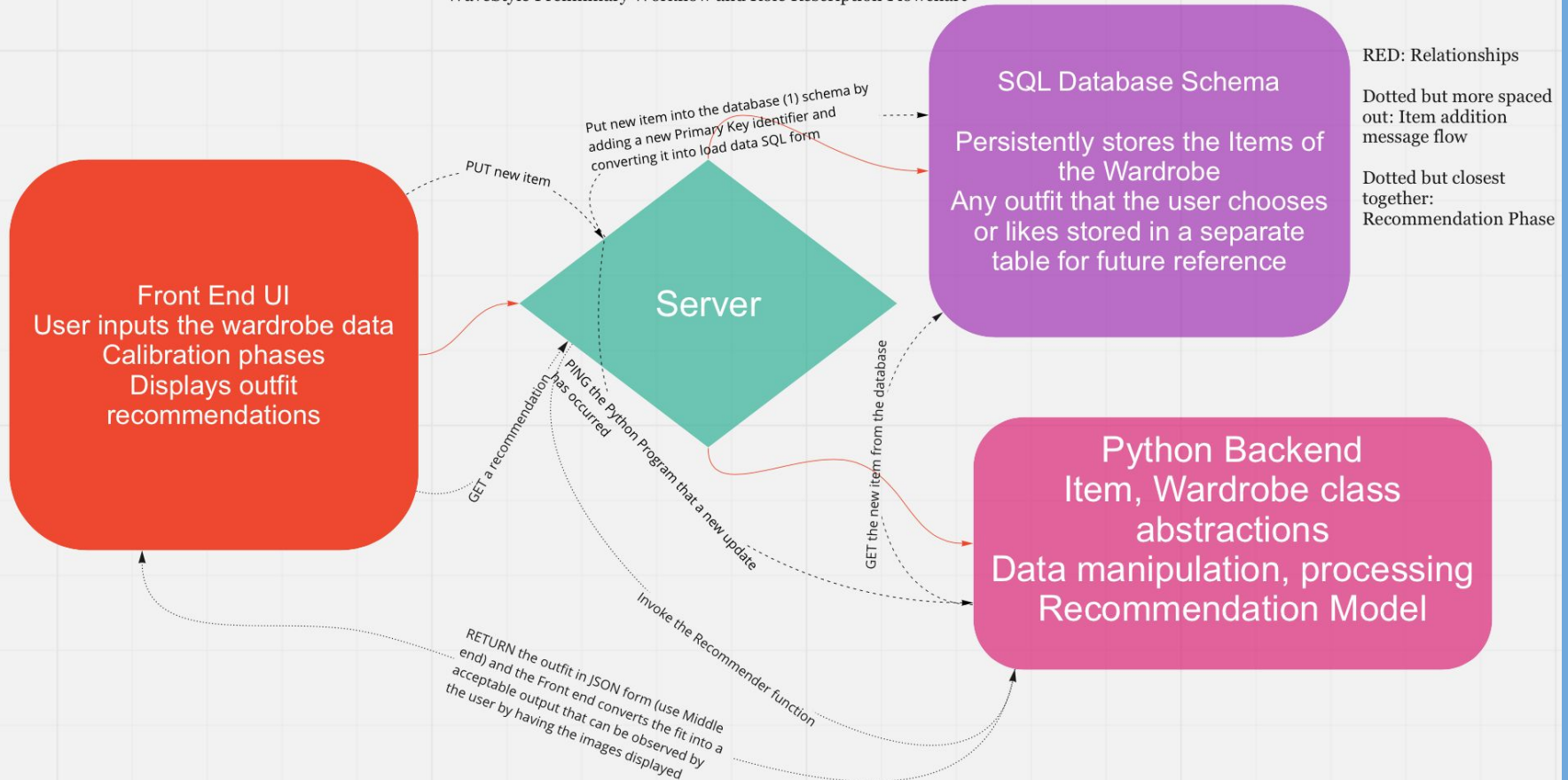
- Spikes

- Image storage and retrieval
- User authentication and secure data storage



Architecture

WaveStyle Preliminary Workflow and Role Rescription Flowchart



Technologies

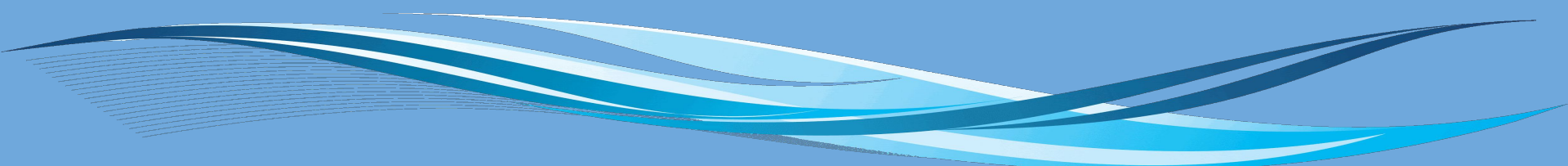
[React Native] for the frontend

[Python] for the backend and machine learning

[JavaScript](Node.js) for setting up the server

[SQL](Postgres) for storing wardrobe and user information

[Git] collaboration between team



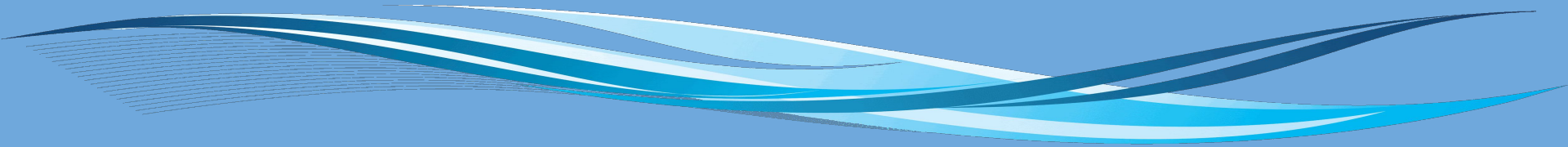
Technologies: Python Libraries

[Tensorflow](Keras) for training and defining our Neural Network models for outfit recommendations

[FastAPI] to facilitate communication with the main server using HTTP protocol

[Pandas] to encapsulate and transform wardrobe datasets

[Numpy] for efficient manipulation of input data for the machine learning model(s)



Challenges + Risks

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[Support for multiple users] complex feature set, multiple moving parts

[Model] how to learn a user's fashion preferences (color, item combinations, etc.) and adaptively give “good” recommendations

[ReactNative and Node] are unfamiliar technologies

Minimum Viable Product

- Capability to add items and view a wardrobe in list format
- Store users wardrobe persistently so it does not have to be entered again
- Generate random permutations of an outfit based on the selected weather and occasion

