

Why did the robot sleep under a car?



He wanted to wake up oily! 😂



Can I joke on you?

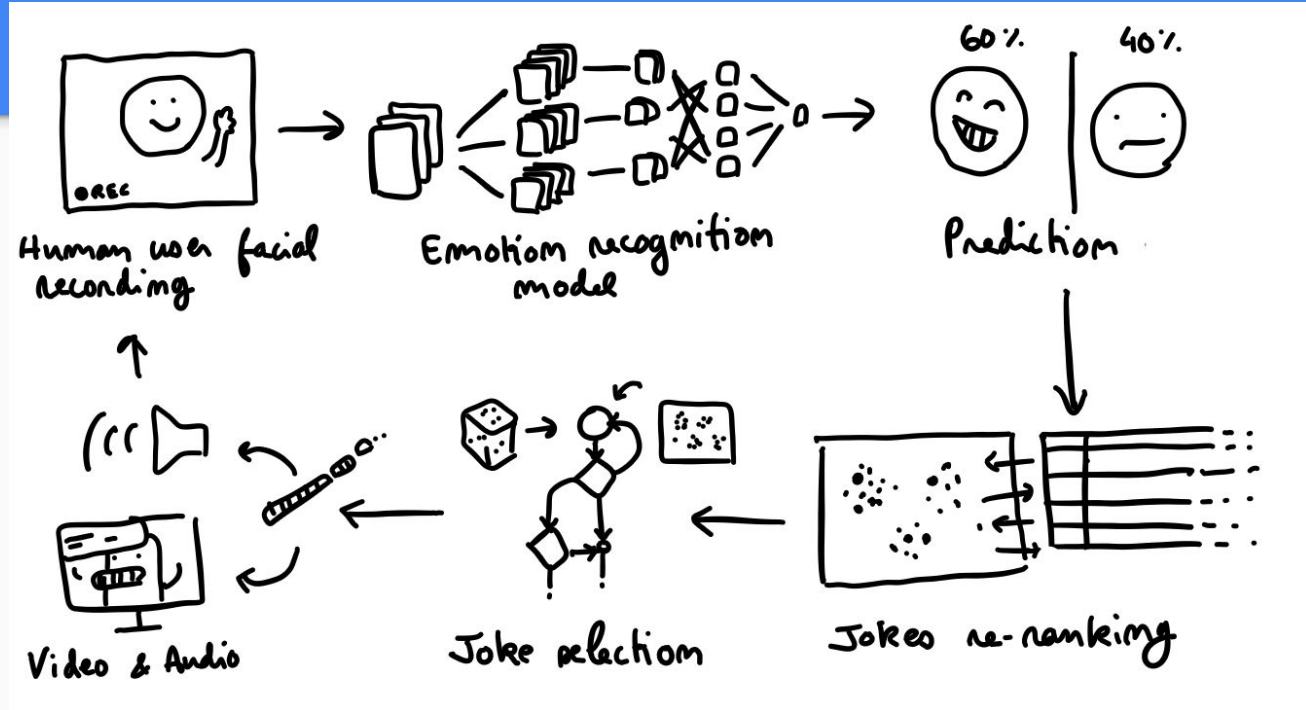
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6/11/2023

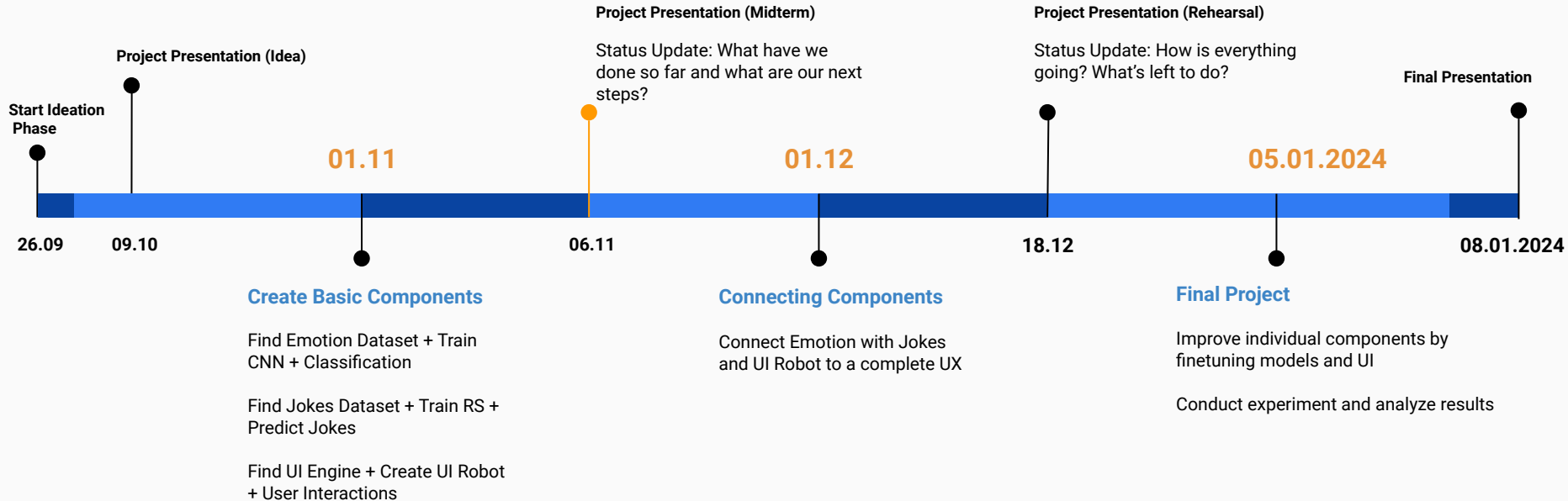
Recap

Idea

A robot that tells jokes to the user. Able to detect the user's facial expressions, he learns to pick jokes the user seems to like.



Planning



Research Question

Research Question

Does a robot UI with laughing detecting make the overall UX more enjoyable to use for the user than a random joke telling UI?

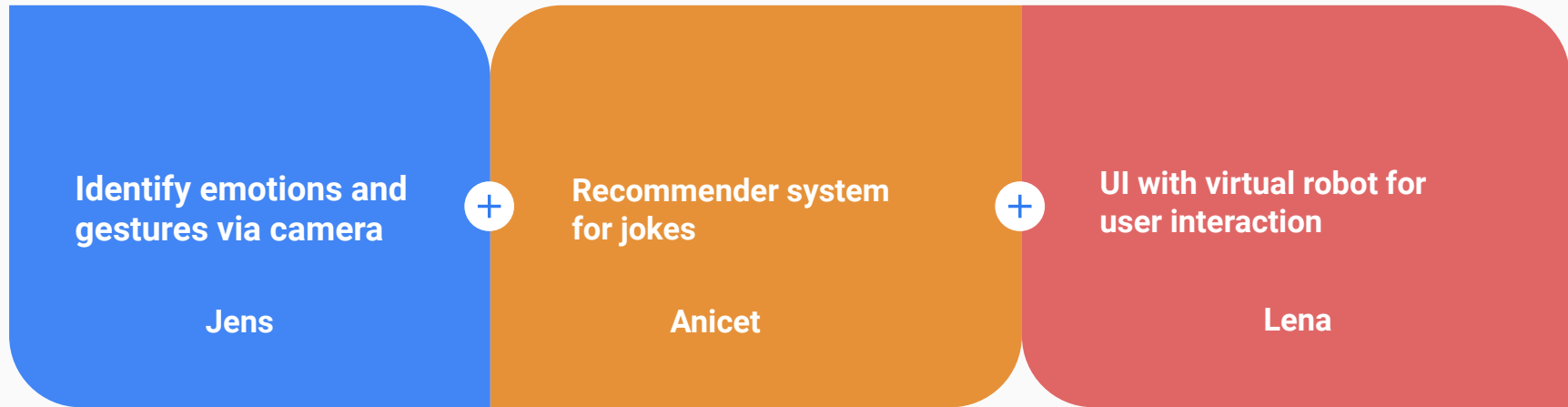
Variables

3 options

- UI: Empty UI with jokes written on the screen
- Facial expression: Same UI with added like/dislike buttons
- (Recommender system: `jokes.random()`)

Status Update

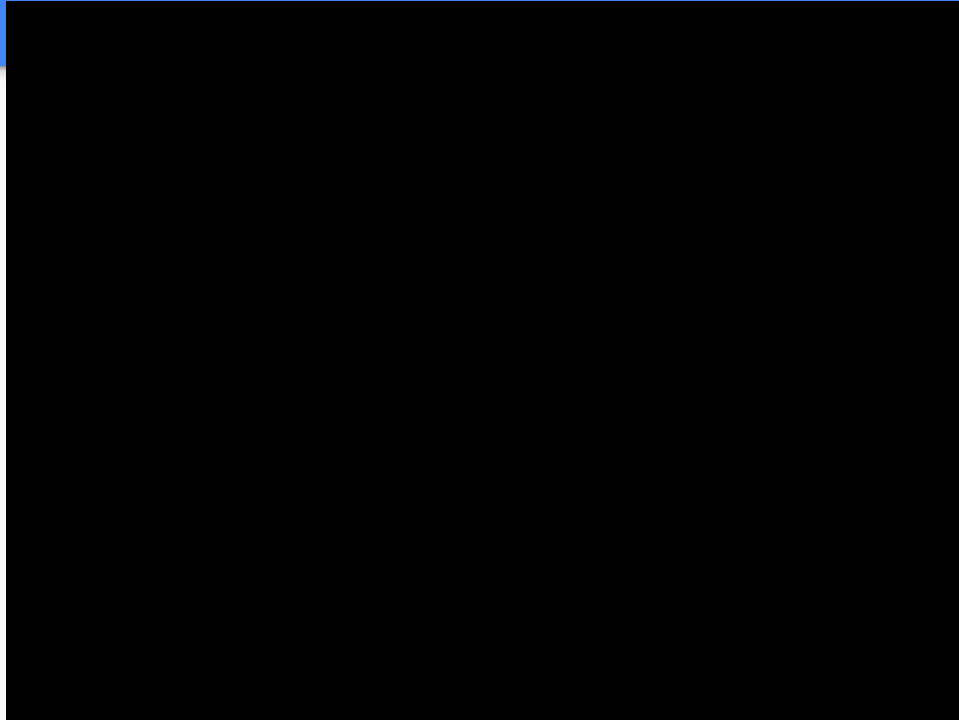
Parts of the project



Emotion Detection

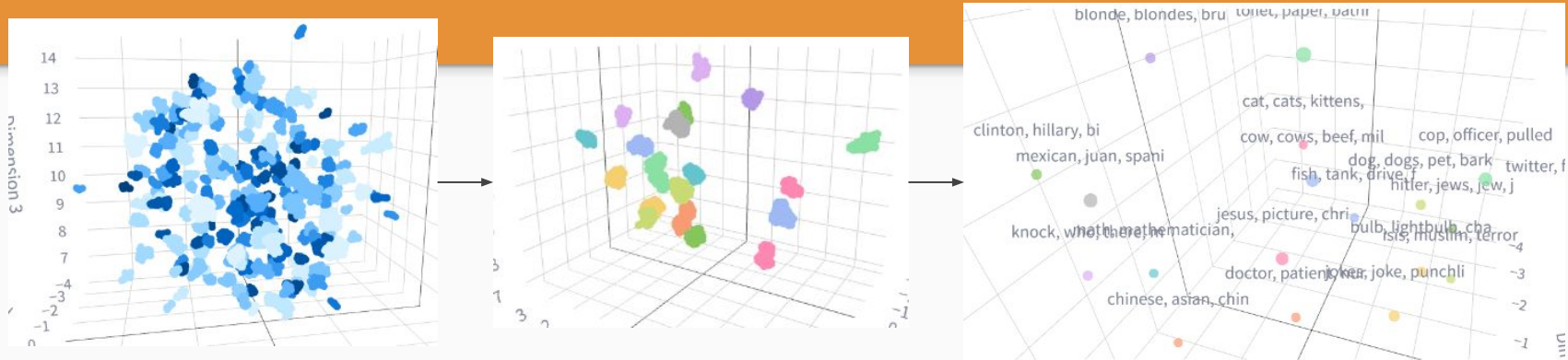
- Use MediaPipe to create facial keypoints
- Different models (NN) on different datasets
- 90% accuracy between non smile and smile classes
- Confidence interval to estimate the degree of smiling
- Real life video can still be tricky to detect

Emotion Detection



<https://youtu.be/-uFzYbnb7Lg>

Joke Recommender



- ✓ Jokes classification using semantic clustering (+ filtering)
- Recommender as a stationary k-armed bandit problem
 - classic reinforcement learning
 - epsilon-greedy algorithm for initial exploration
 - joke type repetition penalty to avoid a unique category to be spammed

Robot UI

- Created basic UI with Three.js and React
- Searched for a 3D models
 - Looking cute
 - With slight animation
- TTS Web API
 - Cross-Browser Support is difficult -> depends also on OS
 - Multiple voices possible - finding one that does fit the robot and sound natural hard
 - Working on Firefox
- Create basic interactions with displaying jokes to user in UI
 - Jokes loop & random joke selection

Can I joke on you?

"Why did the math book look so sad? Because of all of its *problems*!"



Outlook

Next Steps

Combine parts to have a complete working project

- Create user flow in UI to be able to interact
- Use camera input from laptop to detect emotions real-time
- Use jokes from recommender in UI
- Compare and measure k-armed bandits solutions for the recommender

Questions?
Feedback?