

# KUB

Team D4

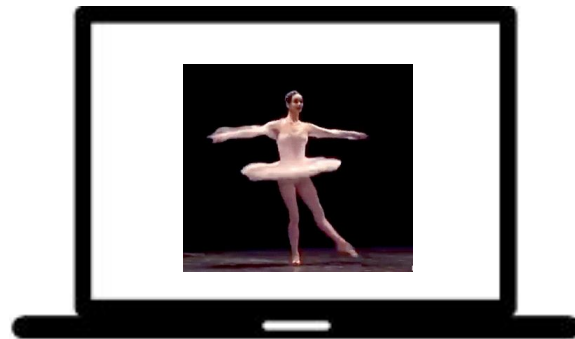


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# KUB Application

**Our problem:** Learning to dance is time consuming, expensive, and often inaccessible to everyone.

**Our Application:** A portable dance trainer that can offer corrections on the go.



# Solution

## Web Application

JavaScript, Node.js, HTML, CSS

AlphaPose PyTorch version

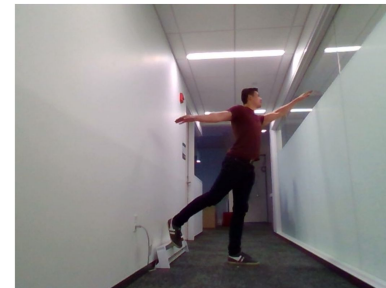
AWS for accelerated pose capture

Python function library



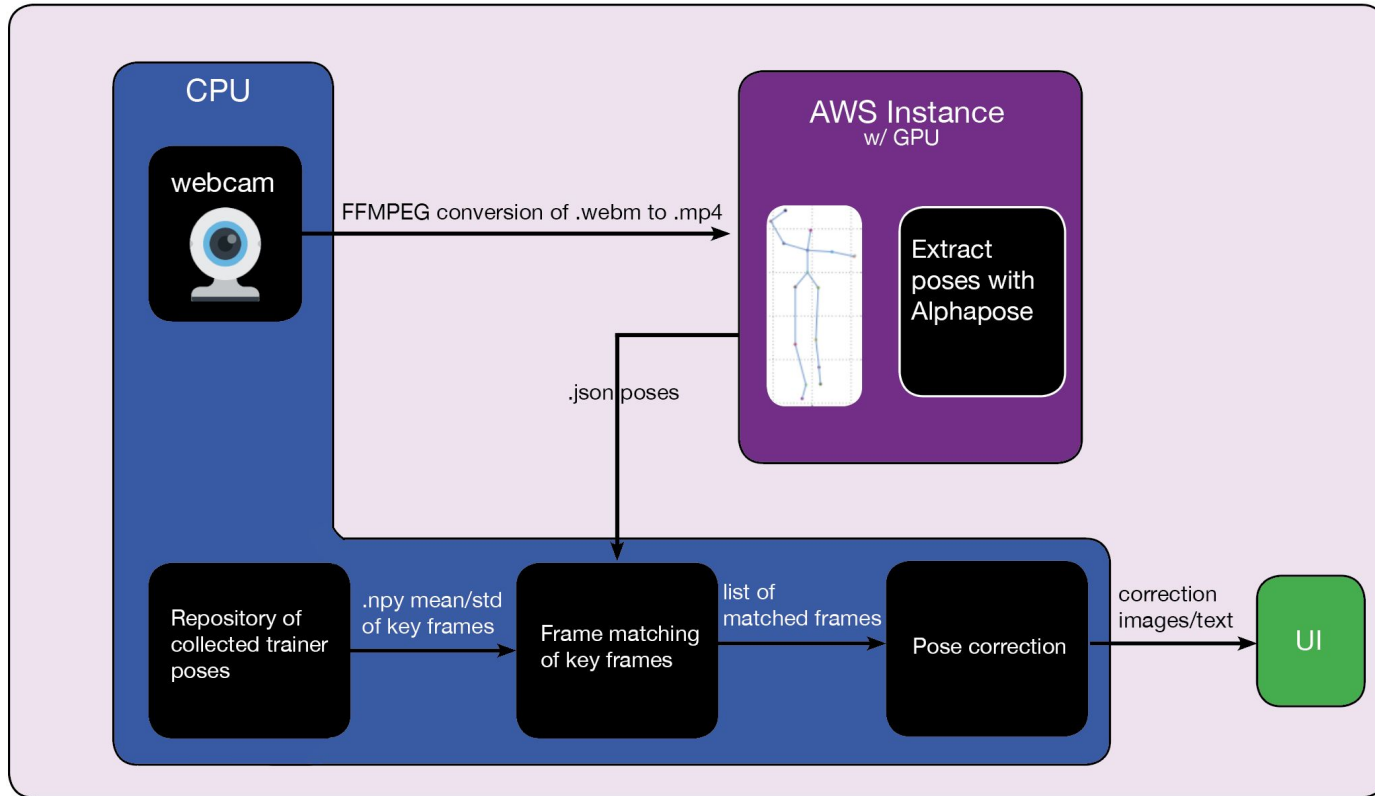
**KUB Trainer**

First arabesque tendu



Capture pose

# Approach



# Demo

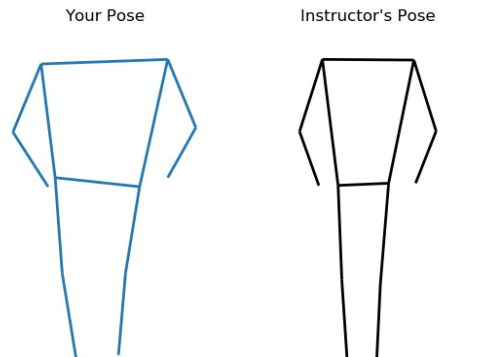
## User chooses what dance step to learn

- Fifth position arms
- Passé
- First arabesque tendu
- Port de bras
- Demi plié in second position

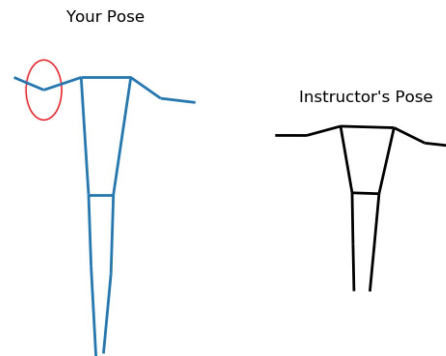
**KUB Trainer shows the movement**

**User performs movement**

**KUB Trainer gives back feedback**



Well done! We saw nothing wrong with your movement.



straighten your left elbow slightly

# Metrics and Validation

## Pose Estimation

Requirement: Accurately estimate pose from a video of roughly one hundred frames in under **thirty seconds**; Ensure joints are estimated correctly and extracted poses fall within the confidence interval in question.

Validation: We measure response time with every run and average the confidence estimates from every frame to get the confidence of the pose estimation of the video

# Metrics and Validation

## Feedback Quality

Requirement: Monitor feedback correctness (how accurate was the suggested feedback), feedback relevance (how relevant was the suggested feedback), and feedback clarity (how clear was the suggested feedback).

Validation: We survey dancers (after every move) to score the correctness, relevance, and clarity of the feedback from 1 (Low) to 5 (High).

# Metrics and Validation

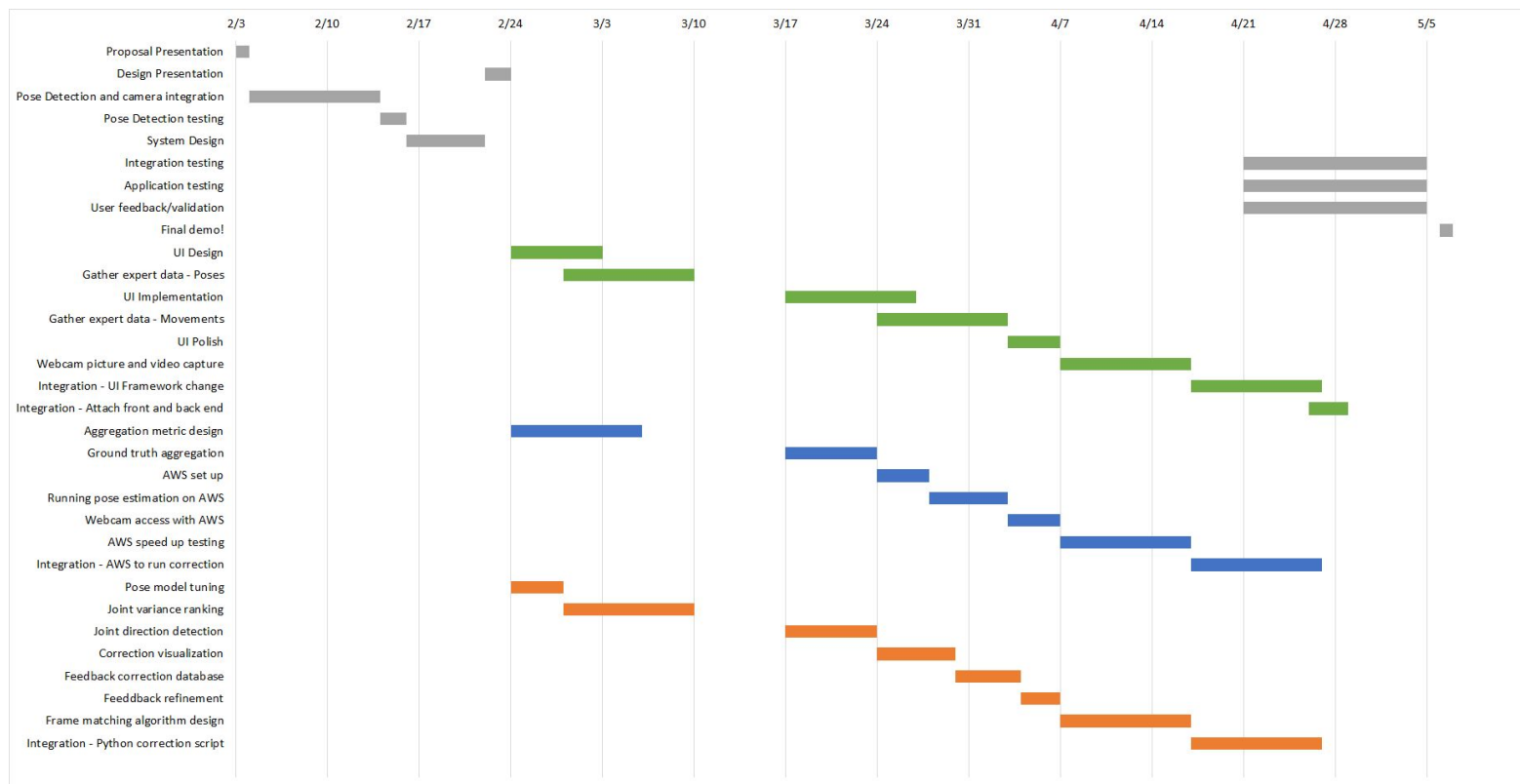
## UI Experience

Requirement: Monitor ease of UI use (how easy is the UI to use), UI flow (how intuitive is the UI to use), and UI design (how well is the UI designed).

Validation: We survey users to score the ease, flow, and design of the UI from 1 (Low) to 5 (High) after they perform and correct five moves.



# Project Management



- Team
- Kristina
- Umang
- Brian

# Lessons Learned

- Everything takes longer than you think it will
  - Schedule more time than you predict
  - Gantt charts are hard to follow
- Integration causes problems
  - Document software dependencies
  - Test that components work beforehand
- Set meeting times 30 minutes earlier if you know everyone always runs late :)