

# Dance With Me

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How might we use  
our data to connect  
with others?

Dance With Me is an interactive  
art installation that visualizes  
similarities

Dance With Me is an interactive art installation that visualizes similarities **within your own movement,**

Dance With Me is an interactive art installation that visualizes similarities within your own movement, **between you and the previous person who used Dance With Me,**

Dance With Me is an interactive art installation that visualizes similarities within your own movement, between you and the previous person who used Dance With Me, **and for CPSC 547...**

For CPSC 547...

Visualizes similarity in  
movement between you and  
**the last 25 people** who used  
Dance With Me.

For CPSC 547...

Visualizes similarity in  
movement between you and  
**the last 25 people** who used



Dance With Me.

reduced set of data to represent "all"  
past users to minimize lag



# Concept

- 20 second experience.
- Use Kinect to capture motion data.
- As you move around the scene, in real time, Dance With Me will visualize people\* who were at the same\*\* location in space at the same relative time.

\* up to 1 past user per frame

\*\* based on discretized position of right hand



Example of visualization through space and time.

# Why visualize...

- Bodies
  - Clear mapping between you and the data you generate
- This concept
  - Reduce a large dataset into consumable, meaningful chunks while preserving the richness of the dataset
    - Filter by time and space
- Right hand
  - More potential diversity in location discretization



Example of visualization through space and time.

# Video

[https://drive.google.com/file/d/1ejYBHvmro8\\_IKbiwtC8CIITSJ0tZIDJa/](https://drive.google.com/file/d/1ejYBHvmro8_IKbiwtC8CIITSJ0tZIDJa/)



**In you vs. all, we find previous people who were at the same place at the same time as you.**

# Viz Components

- Current and past users' silhouettes.
- Color determined by body position.
- Left side: live image.
  - Past silhouettes continue to move for 0.25 seconds before fading away
- Right side: output image.
  - Only shows past silhouettes "discovered" by current user



Live image



Output image

# Silhouettes

- Current user is always at the front.
- Silhouettes are displayed exactly where they are found.
  - Clear mapping of movement → output



Example silhouette.

# Color

- RGB color is determined by body position.
  - Right arm → R value
  - Left arm → G value
  - Legs → B value
- Tested RGB and HSV color spaces and RGB seemed more straightforward for mapping position to color.



Examples of  
position  
mapping to  
color.

# Silhouette Trails



Past silhouettes continue to move for 0.25 seconds after being discovered by the current user.

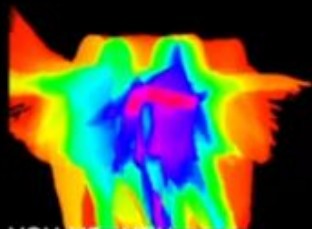


# Silhouette Trails

- Shows trajectory of the past user to highlight how it may be similar/different to the trajectory of the current user.
- 0.25 seconds due to technical limitations.
  - Longer trails introduce more lag to the system

# Output Image

- Show all past silhouettes the current user discovers while moving through time and space, layered on top of each other through time.
  - Only the exact silhouette discovered: no trails
- Also considered circles and crosses to create location map, but this didn't align with other output images in Dance With Me.



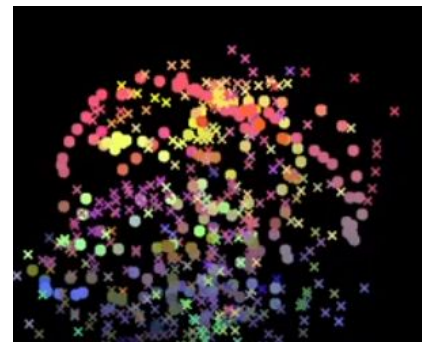
you vs. you



you vs. previous



you vs. all



# Summary

- **What**
  - Documentation of moments users were at the same place at the same time as past users
- **Why**
  - Visualize similarities between current user's and past users' data
- **How**
  - **Encode:** Display silhouettes as given as they appear in time. Color determined by body position.
  - **Manipulate/facet:** Move around!
  - **Reduce:** Filter by time and space.

# User Study

- Tested visualization with 6 people.
  - 2 people worked on the rest of Dance With Me
  - 4 people with no connection to project

# User Study: Feedback

- Nice to know that "same place" refers to right hand placement.
  - Gave the user control over the visualization.
- Users were unaware that they controlled color: this was thought to be random.
  - Users didn't care about color.
- Would be nice to show all output images at the end.
- Would be nice to add a countdown near the end.

# Weaknesses

- A lot of things that the user *can* control, but requires a lot of instruction for the user to understand all of it.
  - Could remove controllable variables (e.g. color) to minimize confusion
- Not truly looking at all past users.

Biggest lesson learned...

# Biggest lesson learned...

**Be deliberate about priorities to aid decision-making.**

- Amount of information to encode
- Artistic merit
- User experience



Thank you