GHH Hackathon 2024

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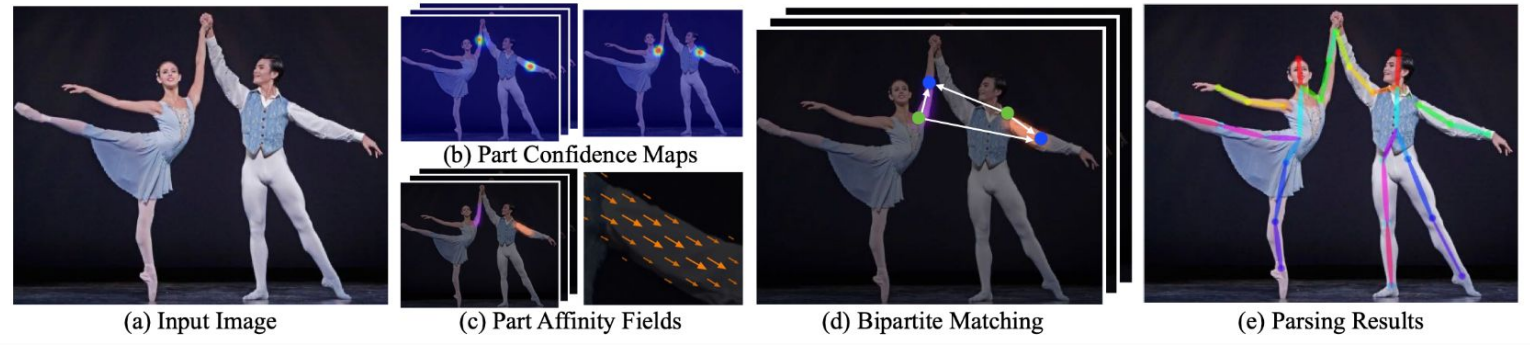
ArTailor

- ★ Our idea is to create a website to help artists perfect their craft
- ★ Users can upload a reference image, their artwork, or both to estimate poses, line art, and perspective using ControlNet. Useful for artists to compare their drawing's with a reference or to visualize lines for determining the line of action.
- ★ In the future, we would add more art tools that utilize AI (not image generation) to help artists (for example, color palette generators, color matcher, and so on)

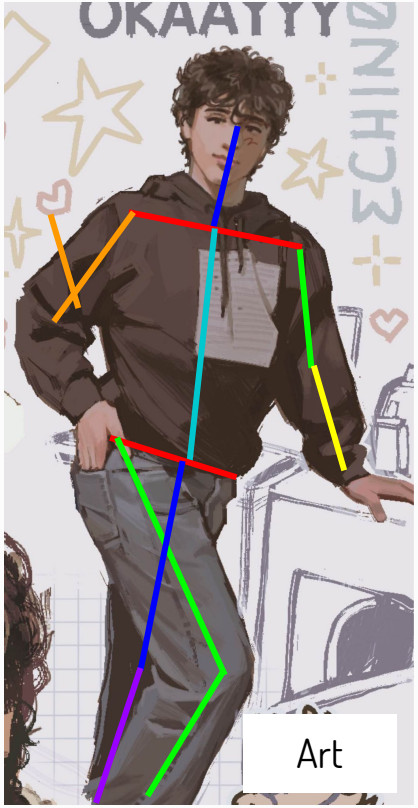


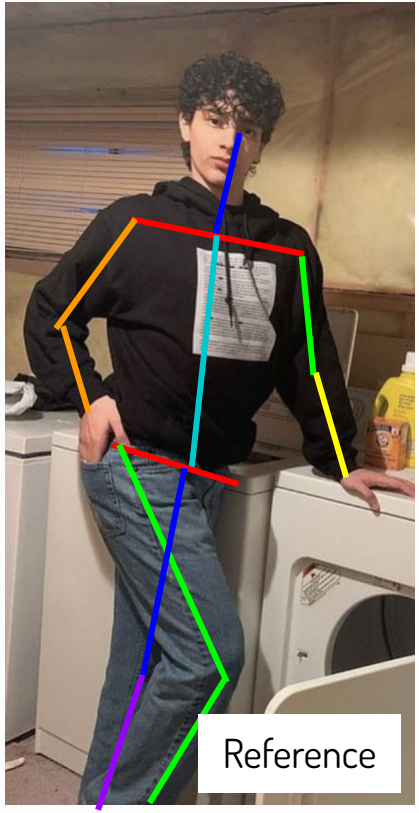
Inspiration

- ★ Controversies over the use of AI for art and GenAI replacing human artists
- ★ AI can be used for things other than image generation
- ★ Artists can use it as a tool instead of being completely replaced

Website Homepage Mockup

The homepage will display each of the tools + a short description alongside a “TRY” button which will direct the user to the selected tool





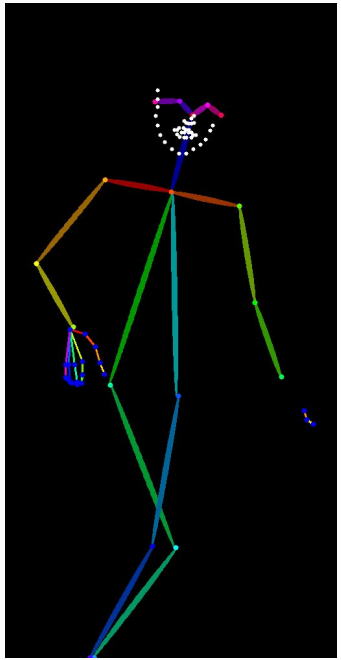
OpenPose Art/Reference Example

OpenPose will generate lines based on the inputted images, and users can compare their drawings with their references

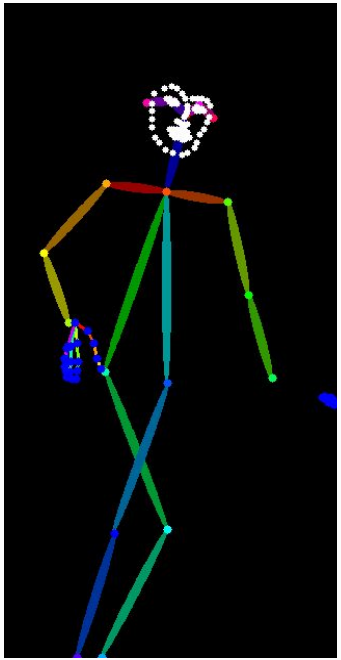
*The following pose estimation lines were generated by hand as an example of what the pose estimation would look like overlaid on the image. Art by Emilie Deadman

Pose Demo

Users can upload an image either through URL or from their local drive.



Art

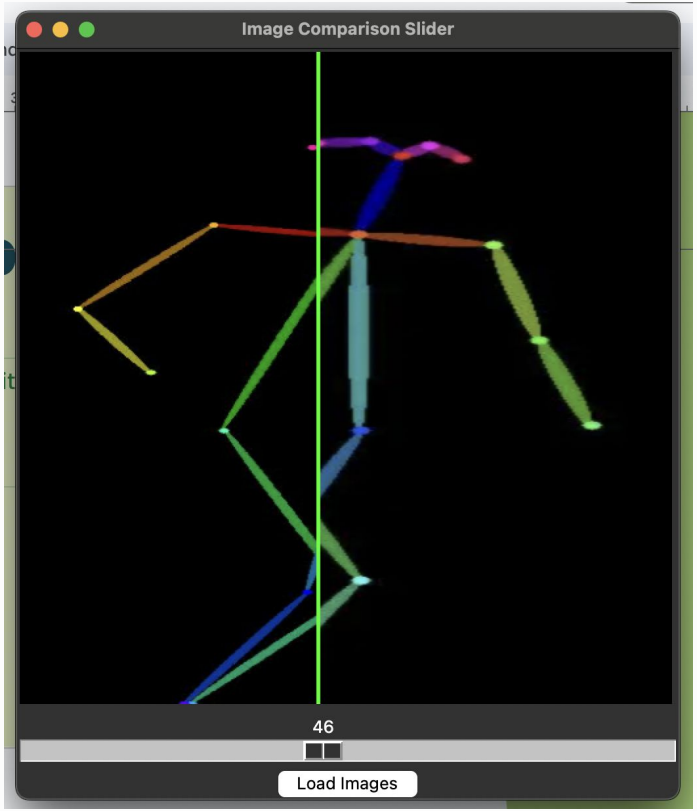


Reference

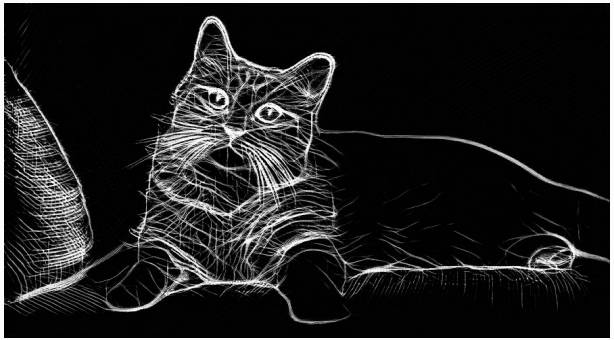
```python
# ask user how they would like to upload images
pick = input("How would you like to upload your image? Input 1 for URL and 2 for local drive: ")

# call function to upload image depending on user input
if pick == "1":
    url = input("Enter the link for your image: ")
    img = load_image_from_url(url)
elif pick == "2":
    img = load_image_from_local()
else:
    print("Invalid input. Please choose 1 or 2.")
    img = None

# resize, process, and display image
if img is not None:
    original_width, original_height = img.size
    new_width = 512
    new_height = int((new_width / original_width) * original_height)
    img = img.resize((new_width, new_height))

    open_pose = OpenposeDetector.from_pretrained("lllyasviel/Annotators")

    processed_image_open_pose = open_pose(img, hand_and_face=True)

    original_width, original_height = processed_image_open_pose.size
    new_width = 512
    new_height = int((new_width / original_width) * original_height)
    processed_image_open_pose = processed_image_open_pose.resize((new_width, new_height))

    imgs = [img, processed_image_open_pose]
    display(*imgs)
else:
    print("No image was loaded.")
```

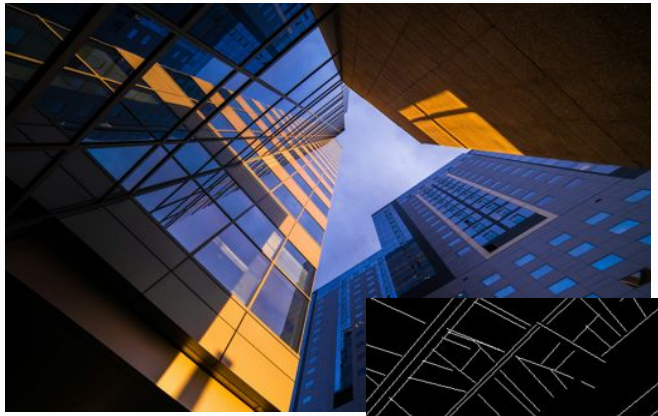
Image Comparison

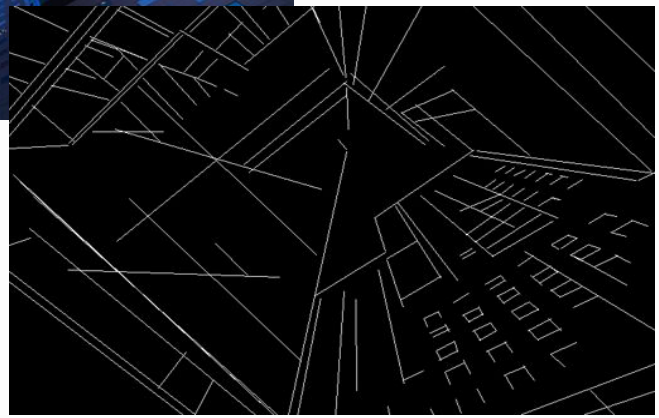
- Implemented using Python & importing cv2, numpy, and pillow
- Can use the slider to quickly compare two images on PC
- Can be used to compare more accurately between the sketch and reference



Line Art and Line Segment Generation







Credits

lllyasviel (January, 2004) ControlNet (Version 1.1) [Source code] https://github.com/lllyasviel/ControlNet

Thank You!

Credits: This presentation template was created by **Slidesgo**, and includes icons by **Flaticon**, and infographics & images by **Freepik**