Flourishing Sketches

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# Abstract

The AR story will include multiple aspects including non-diegetic sound, animation, and transparent images. By using image tracking on various pages of a sketchbook, 2D pop-ups appear of an improved version of the same sketch. Adobe products such as Aero and Photoshop are used to augment the sketchbook. The artifact is a personal belonging, aiming to show the progress of a growing artist over the course of a couple years. Using remediation, sensory immersion, and visual design principles, the animated art pieces capture the attention of the viewer. This project is meant to use art as a form to showcase art.

# Context

I’ve been relatively artistic since I was young, thanks to my parents constantly painting in their free time. I always wanted to be creative and strengthen my creative side to be able to make stunning and cool works in the future. I aim to secure a consistent style that I like visually. I had been drawing on loose sheets of paper, which is why I was compelled to buy my own sketchbook. It is my first and only sketchbook to this day, even while owning it for several years. I started documenting my progress simply by writing the date beside each doodle. Over the course of a few months, I tried expanding my knowledge to different materials and styles. By sifting through previous pages, I can pick the sketches that I am proud of and those that are only kept for the memory. The sketchbook is old with the exterior worn and deteriorating, however not fully finished. Some sketches are in pen, while others are in pencil or marker. I was a shy artist, hesitant to test new methods or abstract mediums. Those that are in pencil are slightly smudged with age, rendering each page a grey-ish colour. It is a relatively large sketchbook, easy to fit many small pieces and doodles or perhaps a landscape. With this sketchbook, I aimed to further my understanding of realism to better personalize my sketches. I spent many hours looking at popular creators on YouTube, explaining tips and tricks of digital art. My ultimate goal was to create digital art, since most (if not all) of my references and favourite works were found online by small modern creators. I loved the emotions expressed and vibrant colours that were easily emulated onto the screen, with no worry of physical destruction. One day, I hear something along the lines of “if you struggle to draw traditionally, don’t expect the results to be different digitally” or “having better/expensive equipment doesn’t make you the better artist”. Upon hearing this, I recognized some truth in these statements, and decided to continue refining my raw skill. Even though my efforts were sporadic, there are some visible improvements.

# Augmented Reality Prototype

Within the sketchbook, there are several pages with image markers that the user will have to scan to activate the AR experience. These markers are identified with unique QR codes. Once a marker is scanned with the user’s camera, a 2.5 diorama settles on top of the marker. The augmented images sit ninety degrees on the marker, resulting in the top of the AR experience to face the viewer. This means that viewers will need to tilt the image marker backward so that the overlay can be seen. The 2.5 dioramas are copies of the corresponding sketch, except they are augmented using multiple senses. The digital recreation of the sketch is enlarged and improved with added animation, colour, and background music. The first sketch includes a figure standing in front of a circular ring. In the augmented scene, the figure is wearing red, has black hair, and is surrounded by two yellow rings within each other. This figure wearing a dark red colour complements the yellow light of the rings around them. The yellow illumination is slightly reflected onto the figure’s body and hair, creating a sense of depth to the scene. Low impact background music fades in and out to accompany the stillness of the scene, seemingly stopped in time. The second scene is of a traveling woman standing with her briefcase on the dirt path of a grassy hill to watch the scenery in the distance. The hill covers the view that the woman sees, leaving room for imagination to what might be so captivating. The viewer can see another hill in the background including a thin blue waterfall. The discolouration in the close and distant hills represent the difference in forestation. In the sky, birds are animated flying linearly through the clouds. The clouds are tinted yellow from the hidden sun. Chirping birds can be heard as diegetic sound, along with crickets and hints of the wind. The woman holds on to her hat as the wind blows her dress to the left. This overlay is split into three layers; the frontmost hill, the most distant hill, and the sky. As the viewer moves their camera along the AR, the hills move to provide a realistic point of view. In the third scene, a boy appears as an angel. The angel has blue wings on his back, matching the blue feathers he wears below his torso. He stands in front of an enlarged full moon, with a couple meteors falling behind. These meteors are animated with Photoshop’s timeline frame by frame animation. The colour palette mostly involves blue to match the colour of the nighttime sky, and the colour that reflects from the moon on the clouds. Warm string instruments are playing in the background, incorporating elegance and august. This is what feeling I associate with the interstellar region. The fourth scene includes many elements. The main concept is a boy standing in front of a window, looking at the beauty of spring blossom. Beyond the window is a plethora of flowers, in a multitude of colours. The overwhelming scene of flowers captivate the boy’s attention as he stands in awe. The boy’s front is illuminated by the window, signifying the luminosity and brightness spring brings after many months of cold winter. A couple of flowers are very close to the window. These flowers seem to have surpassed the barrier of the window and are infiltrating the darkness that the boy stands in. This scene was originally drawn during the early eruption of lockdowns due to Covid-19, when being kept inside began feeling like a chore. The outdoors was becoming a foreign world, ultimately diminishing our memories outside and forgetting the simple pleasures of nature. The boy’s backside is darkened, from the darkness of the room. The only source of light is the window, also symbolizing the pathway of escape for the boy. The only obstacle between him and the outside world being the thin sheet of glass. The boy’s attire matches the deep saturation of the flowers. The boy and the flowers connect with each other more and more. The final scene is the most interactive out of the others. It showcases two polaroid images that alternate when the user presses a button on the screen. The buttons are “previous” and “next”. The first image shown is of a woman taking a photo of her friend, who seems to be too short to fit in the frame. The second image is of the friend taking the camera to her own height, leaving the other woman in the background, surprised. The shorter friend wears a fierce smile, indicating her bold attitude and confident movements, hence her quick reflex to take the camera. These images suggest a friendly relationship between the two, comfortable with each other and being playful. The captions of the polaroid also hint at their closeness, with light teasing. Polaroids were once a big trend in the early 2000s and kept their popularity relatively high throughout the oncoming years. They symbolize permanent memories, captured in the heat of the moment, and shared only by those in the whitewashed frame.

At first, Photoshop was used as an attempt to draw the unique image trackers. Unfortunately, the camera was unable to pick up the image because of their simplicity. The trackers looked like a series of symbols that represented the art of each overlay. For example, the angel in front of the moon would have a blackout circle with a few lines protruding from the right side to symbolize the shooting stars. Therefore, they were replaced with QR codes. QR codes have a simple complexity and are widely known for their reliable ability to lead users to an external source (the AR). Initially, each overlay would have a cocooned atmosphere. Every time a scene is triggered, the screen would dim in brightness to accentuate the digital creation and immerse the viewer by bringing focus to the pop-up. The problem with this is that creating filters for solely the background of the AR was not yet experimented with. There were tutorials online on how to create background filters for face tracking or hair tracking, but there were limited resources that were able to be followed. Eventually, the realization came to mind that pre-sets existed in the colour correction section, which is what is currently seen on each overlay. The filter name is called “Night”, which leaves the background in a saturated dark blue hue. Many challenges surfaced while creating the augmented reality experiences. The first scene of the red figure and yellow rings were originally meant to be spinning vertically. This feature was readily available in Adobe Aero but was much more difficult in Lens Studio. Lens Studio requires a little more knowledge about animation, since the positioning and timing is done manually. It would’ve been helpful if there were options like Aero, where the figure could rotate a certain number of degrees on a loop, or even spin. For this scene, accurate rolling sound effects for the moving rings were difficult to find, so they were replaced with another type of sound – non-diegetic sound. This way, the scene still has an audio aspect to fit the concept. The first scene with the yellow rings was the first attempt at Photoshop in a long time. This means much experimentation to be done with the software as the drawings progressed, however, none of the obstacles experienced hindered the final product. The scene of the moon and the angel is personally the most captivating. The background music really amplifies the attraction to the calmness that the atmosphere seems to embody. It is almost like the boy owns the moon, meaning he is superior. The moon was previously meant to be crescent shaped, but it seemed more appropriate as a background for the angel. The big shape fills space, and its details stand out. The landscape scene exceeded expectations; expectations being minimal. The colours complement each other well, and the woman’s dress was kept to a playful colour, keeping an uplifting atmosphere. The expression of the landscape was the easiest out of the other scenes because of the lack of detail in the rough sketch. Similarly, the floral wall in the fourth overlay included more freedom in which flowers would be present. A strong point of the floral scene is the number of layers it includes. Without many 3D aspects, it suggests a 3D space because of the positioning of the objects. Users are free to move closer to look closely at details, as well as admire the many elements layered on each other. Adding interactivity to the final scene adds a fun twist, where instead of moving the camera around to shift perspective, the engagement comes from the content. By tapping the polaroid, the next polaroid takes its place.

Each scene has its own touch of realism among the digitally drawn elements. For example, the full moon, the birds over the landscape, and the floral wall beyond the window. Each piece was more time consuming than I had originally thought, mostly due to my perfectionism in the figure composition and colouring. Switching software did change the outcome from what I predicted the final product would look like. Although the two products are mostly the same, I was hoping for a little more animating freedom overall. I cannot blame Aero for the unexpected obstacles faced, since it is still in the beta stages. Aero has great potential.

A picture containing text, whiteboard

Description automatically generatedA picture containing text, whiteboard

Description automatically generated

From the images above, the layout and detail are relatively vague. This left enough room for creativity as the project advanced. Even as the project was being built in the software, ideas were changing and elements were being modified to fit a theme. I had enough information to be able to set up the overlays coherently but had freedom to choose what they would look like more specifically deeper into the process. Some overlays came out better than anticipated, which garnered motivation to finish the other overlays with a similar degree of quality. All overlays were kept as the focal point, in the middle of the user’s screen. That way, users can see the pieces easily and naturally.

## Sub section(s): Sample Overlays

**A picture containing qr code

Description automatically generatedYellow Ringed Enclosure – Overlay 1**

The user is given the sketchbook for viewing. As they sift through the sketches, they find a couple with little QR codes beside them. The QR codes (QRCode Monkey, n.d.) encourage the user to scan it with their mobile device using the Snapchat application. A filter named *Flourishing Sketches* loads on to the screen. A series of two-dimensional dioramas bloom from the QR code, sitting ninety degrees on top of it. From this angle, the user can compare the sketch and the augmented piece side by side. By viewing the two pieces simultaneously, the user is able to grasp how augmented reality can uniquely present the same content while being more interactive. With this overlay, the user sways the camera from side to side to capture the different perspectives of the rotating yellow rings that spin centrally around the main figure. The blue hued background provides extra focus, so that the augmented reality scene can stand out from the background. The spinning rings and relaxing background music (ShortRecord, 2021) is looped, so the user can observe the scene for as long as they desire.

**A picture containing text

Description automatically generatedFull Moon Angel – Overlay 2**

The user will spot a sketch made from pen of a boy with feathered wings standing in front of an enlarged moon. Beside the sketch, there is a personalized QR code codes (QRCode Monkey, n.d.) that the user will have to scan with their camera using the Snapchat app. Once the user starts scanning, a blue hued filter fills the screen – this is the indicator that the augmented reality scene is working. The user can then tilt their camera upward to position the AR scene upright, sitting on top of the QR code. The drawings are side by side once again. The blue hue fits the colour palette of this scene nicely, adding on to the galactic atmosphere. Background music starts playing automatically on a loop, consisting of deep string instrumentals (InspectorJ, 2017). The most noticeable element is the enlarged moon, hovering over the angel. The image of the moon is taken recently, flaunting its crevices and ominous presence. A gif of a shooting star replays on a loop in front of the moon (Wikipedia, 2022) and beside the angel. The angel’s position is offset from the centre to provide room for the shooting star and simplify the scene through spatial awareness. The character was inspired by Neon Genesis Evangelion, in the sense that the characters had lanky figures. The aura seems melancholic and somber, yet unified and graceful.

**Mountainous Landscape – Overlay 3**

A picture containing text, businesscard

Description automatically generated

As the user scans the personalized QR code (QRCode Monkey, n.d.) for the landscape design, the background tints blue and the AR overlay pops up. This scene has three separate hills conjoined into one view. The first consists of the frontmost grassy hill, with a blonde lady admiring the view in the distance. The view contains a large, dark green, arboreous mountain with a slim waterfall pouring over one crater. The woman holds onto her hat as the wind blows, as seen by the direction of the tall grass. The sky is a mix of colours, which complements the colour of the lady’s dress. As the user moves their camera from side to side, they are able to see the multiple layers the make up the scene. At the same time, a formation of birds (Vedran, 2016) crosses the scene in a linear loop, accompanied by the organic sound of birds singing (Taavhaap, 2020). The bird soundtrack is taken in real time, aiming to blur the lines between reality and virtual. This scene refreshes users, tempting them of the vast unexplored Earth with majestic scenery waiting to be experienced.

**Floral Wall Beyond the Indoor Barrier – Overlay 4**

A stuffed animal in front of a window

Description automatically generated with medium confidence

As the user keeps their camera open on Snapchat, they can proceed to scan the QR code (QRCode Monkey, n.d.) relating to the boy and the flowers. The blue tinted background helps accentuate the luminosity brought upon the boy from the flowers. The darkness of the background also demonstrates the darkness that the boy sits in, enveloped in the profound loneliness curated within the room. This scene exhibits a three-dimensional space, without including three dimensional elements. The proportions and placement of each element registers as a more realistic environment especially with the number of images layered on top of one another. This layering creates depth within the scene. The depth encourages the user to sway the camera back and forth to grasp the perspective granted. This scene connects to users on various degrees, relating to any sort of darkness experienced in solitude. The flowers (Swaminathan 2008, Navarre 2019, Buntysmum 2020) symbolize an epiphany, leading to a blossom of growth and acceptance.

**Polaroid Pictures – Overlay 5**

A picture containing graphical user interface

Description automatically generatedGraphical user interface

Description automatically generated

As the user progresses through the augmented reality scenes, they come across the final one. As the QR code is scanned, a large white square appears. This is the border of the polaroid. This scene is the most interactive, leaving the user in a playful mindset. This scene is a short story about one friend stealing the camera out of the other’s hands. Inside the polaroid are two separately drawn figures enclosed within the white border. This overlay provided a new view on how AR could be crafted to tell a story. In the original sketch, the two images had to be laid out beside each other. In the overlay, the images could be switched out for another, being easily comparable. The music in the background captures the lighthearted bond and lively act. Letting users see a personal memory carves a pathway of connection to these characters who have shown this moment to the user specifically.

## Sub section: SDK

At first, I wanted to use Adobe Aero because of the many predetermined features available in terms of animation. Using software among the same client base was a good idea, since importing objects would be a breeze. Adobe Aero was also connected to the cloud, which meant progress was saved automatically. No progress was lost during testing stages. Unfortunately, due to file sizing and previewing limitations, I decided to switch to Lens Studio. I already had the Snapchat app downloaded and could fit multiple overlays in one project. With Aero, only one overlay was permitted per project, which meant the viewer would need to view each overlay separately after downloading the Aero app that crashes frequently. Adobe Aero was my first choice because of the various animations it offered, including “hide”, “unhide”, “spin” or “rotate”, and “play images”. They are all self explanatory and did not need manual coding like Lens Studio does. One interesting feature I found in Lens Studio was that the backside of images turned invisible. This prevented the first overlay from being able to rotate a full three hundred sixty degrees, but only maximum ninety so that the rings would be visible to the user most of the time. I did not need to add precise coordinates, since the actions were already coded. This made the assembly process much faster and smoother. For drawing creation and animation, I continued my use of Photoshop. While Photoshop is widely known for its ability to edit or illustrate images, its ability to animate creations is not a new feature. Having both in the same program is a bonus. The assets that are seen in the overlays are created using Photoshop by hand. They are traced and enhanced with colours and a transparent background to resemble a 2D pop-up. The only tools used were the paintbrush, eraser, and selection tools. I refrained from using higher-level tools like blend or feather, since it would render a different atmosphere to my drawings. For example, they would look more realistic than intended and may end up creating an unnatural look to the figures. This varies per creator, but my personal device was incompatible with the Aero app. Considering the app is heavy on the battery and storage, it heavily influenced my decision to convert to Lens Studio.

Lens Studio has a busy, yet simple interface for new creators. Since snapchat filters were so popular, their team had the chance to invest in the filter-making community. It is beneficial that this software was taught for the duration of one course, which enhanced my familiarity of the object names and functions. Lens Studio was able to hold all my overlays in one project. After hours of experimentation, I managed to incorporate a small spin animation on the yellow rings, as well as a linear animation of birds flying above the landscape. With this practice, I was able to figure out how to create a tap event, which would switch from one polaroid image to the next upon tapping. Lens Studio is very capable when making small projects, however its toll on computer power is heavy. For context, my laptop is only six months old and includes 512GB of storage, 144 refresh rate, and 3060 RTX graphics. From these specifics, one can conclude that it is a strong laptop, yet Studio Lens was fully capable of occupying one hundred percent of its CPU power.

# Reflection and Post-Mortem

*Flourishing Sketches* is an augmented reality project that aims to act as a showcase for several art pieces. Creating this project opened opportunities to apply topics learned in the course, as well as work on something creatively to my interest. I’ve learned that the process of creating a project is just as important as the final product. Connections are made through gentle handling, observation, and personal experience (Greenberg & Malcom, 2002). For example, the scene including flowers beyond the window is relatable to a large majority who suffered directly or indirectly from the pandemic, thus establishing an existing connection. The meticulous steps taken to make sure object placement is correct the search for fitting audios, and painting individual characters are all uniquely memorable parts of this project. The long hours modifying and even creating whole new projects contributed to the look of the final piece. The final product combines both the real and the virtual, and is interactive in real time (Azuma, 1997). While augmented reality keeps the user present in the real world, while also acting as an escape from their daily lives as a form of relief (Bilandzic & Busselle 2011). By creating augmented reality from previously drawn sketches, users are already familiar with the drawings. Having visuals that brains recognize helps users familiarize themselves with the narrative (Pan et al. 2015), inserting memories, desires, and comfort into the medium. Because of familiarization, users are able to relate a little more to the artwork, thus creating an attachment. To make the scene look appealing, design principles were considered. For example, personal aesthetic for originality, simplification (Serafin et al., 2016), and subjective visualization. Users are also guided through the project with prompts such as “scan me!”. Seamless accessibility is crucial in art forms beyond AR, ensuring opportunities are presented to the widest audience possible.

Ultimately, users are captivated by visual and oral aspects of the augmented reality project, while making memories by further interacting with it.

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