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Personal Statement

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JOURNAL BLOG

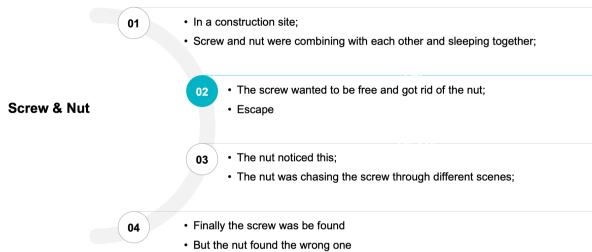
3D Animation - TeleRadio

Week1 (2 Mar. - 8 Mar.)

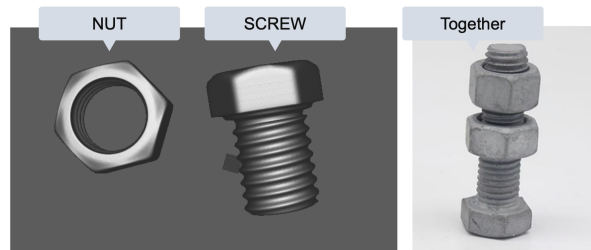
*A preliminary idea (and finally abandoned)

- 1) Name: Screw and Nut
- 2) Genre: Cartoon
- 3) Research Goal: To explore the application of objects' anthropomorphic in 3D animation production process.

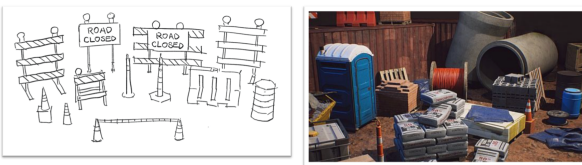
Storyline



Character Design

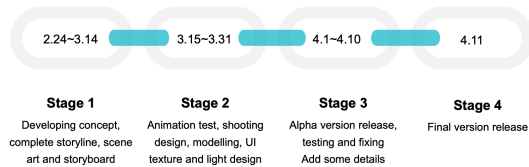


Scene Art



A construction site with cement, cable, brick, tube and indicators.

Timeline



Week2 (9 Mar. - 15 Mar.)

*The preliminary idea is developing forward (and finally abandoned)

- 1) The character animation testing



(Nut Animation)

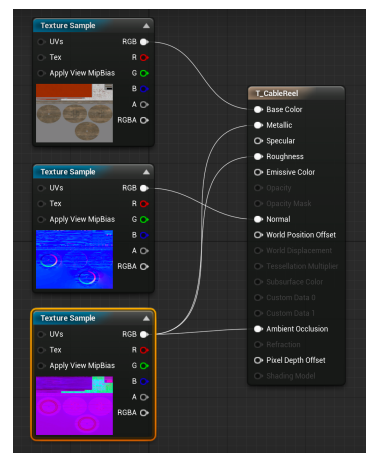
2) Scene Art Design (Modelling)

- The environment of animation is a construction site, so we need the cement, cable, brick, tube, indicators and so on.
- We found several suitable models and tested them in Unreal. (10 Mar.)



3) Texture linking

- Every model needs to be linked with the texture maps again in Unreal Engine, including ALB, NRM and RMA (12 Mar.)

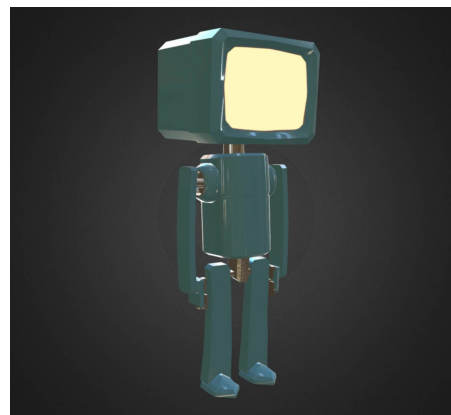


4) INVALID (New plan start) (15 Mar.)

- We found some disadvantages in our current project during the production process, like the characters screw and nut are difficult to make animation, they do not have the head and face.
- A strong idea came into my mind: I would like to make a robot animation with face, head and human skeleton.
- Television Robot with big head and the screen as his face.
- Radio Robot with rectangular head and the speaker as his face.

5) NEW Inspiration (15 Mar.)

- A television robot made by David Zhang (<https://sketchfab.com/3d-models/robot-television-9326cd1109aa4d95a18ef932da577103>)



Week3 (16 Mar. - 22 Mar.)

*** NEW animation project is running with our great enthusiasm and effort**

1) Name: TeleRadio

2) Genre: Low-poly, cute, love

3) Character:

- TV Robot (male, 22 years old, served at the X-Star launch station) ;
- Radio Robot (female, 12 years old, unable to receive signal due to wire damage, X-Star resident);

4) Storyline:

- The tv robot came to the X-Star, looked into the distance and found a radio robot standing next to the fire. The radio robot was very sad because her wire was broken and there was no sound and music.

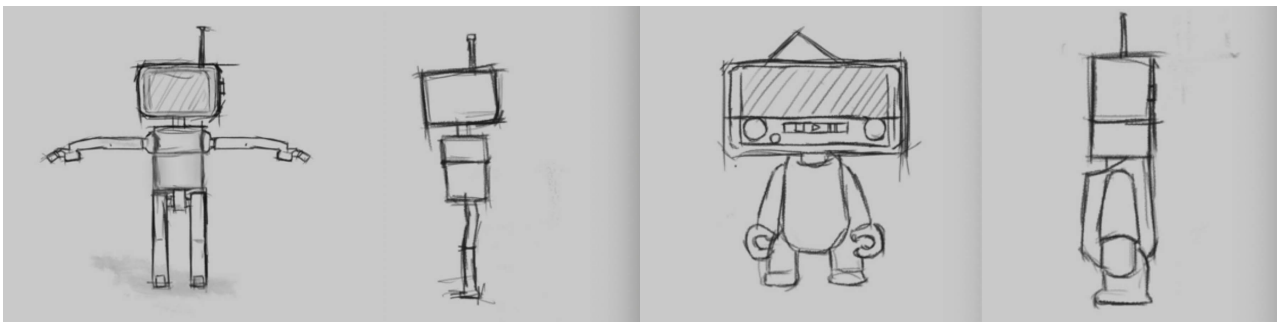
- Her face shows [No signal] [Play 🎵 Radio ..]. Warm-hearted, tv robot saw radio's display and hurried to help her. Tv robot's screen shows [Searching] [BBC NEWS, radio is facing to be completely eliminated, the era of television is gradually approaching]. After playing it for a while, TV suddenly realized that what radio was actually displaying was [Play 🎵 Radio gaga].

- Radio was embarrassed and redisplaying [Play 🎵 We are the...]. This time, again, tv did not wait for her to completely display then started playing [Searching] [We are facing the end of the world..]. After playing it for a while, tv realized that what the radio displayed was [Play 🎵 We are the champions]. Tv was very sorry about that, this time, he decided to wait for the radio to completely display.

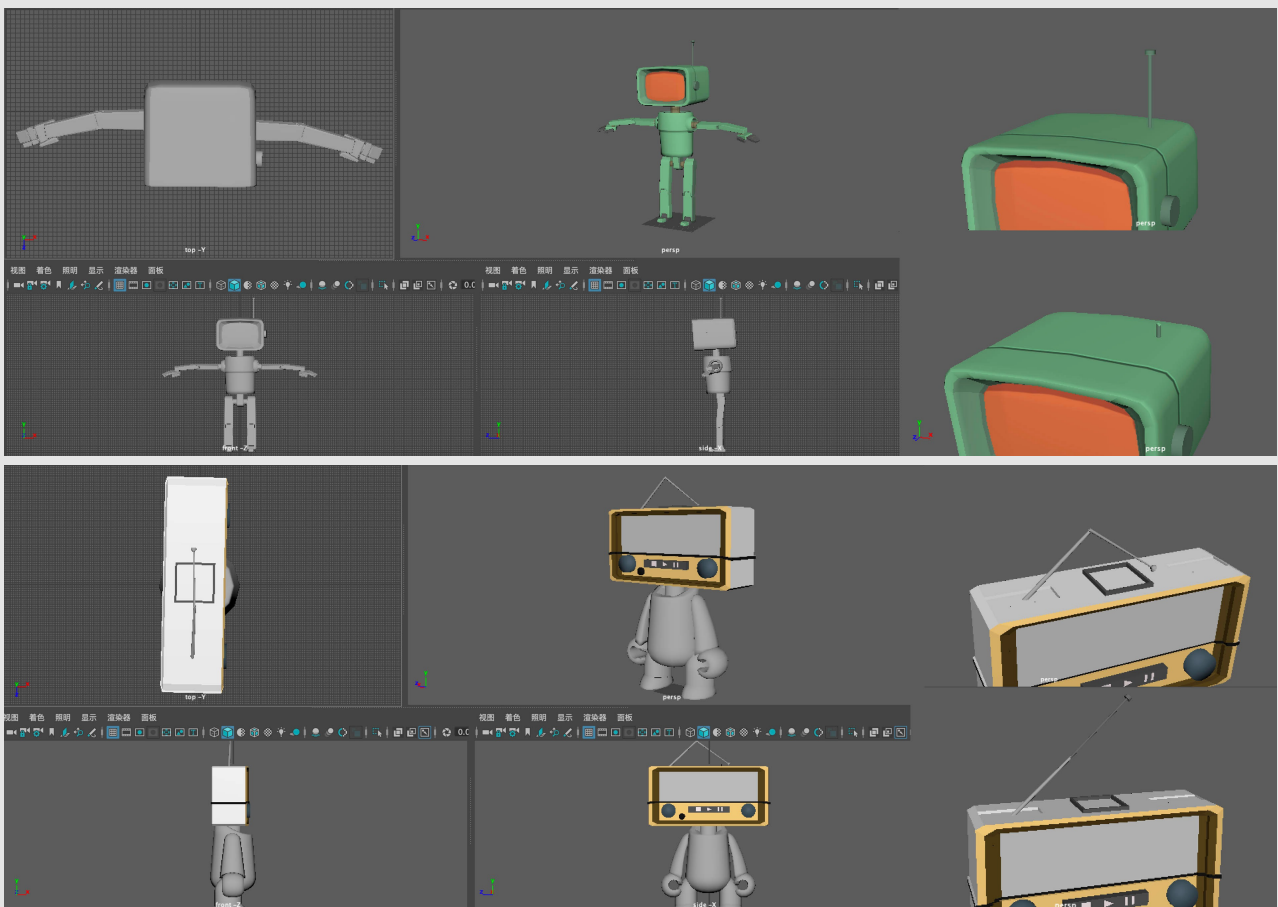
- Radio showed [Play 🎵 Billie Jean][+ Michael Jackson +]. Tv displayed [Searching] then played the MV of Billie Jean, and danced with the music. The radio was also very happy and thankful.

- Suddenly, Tv received an urgent notice[All TV robots back to the camp NOW, urgently]. Radio was too sad to let him go. Tv hesitated finally turned and left. But, after a while, tv thought for a moment and took down his own wire then gave it to the radio robot. Radio got a new wire and continued to play the song.[END]

5) Character Draft (Sketch by Fei Chen)



6) Character Modelling



7) TV ROBOT Character Animation (21 Mar.)

- The TV ROBOT was rigged and animated in [Mixamo.com](#).

- Before that, I modified the model to expand his limbs. (when I first started modelling, I ignored the problem and the limbs sagged and were asymmetrical)

- Testing in [Mixamo.com](#), rigging the skeleton and observe whether the character animation can match perfectly. (debug more than ten times)

*** Shooting script has been finished and the animation was developing forward in Unity and Maya**

1) Shooting script

Shot	Camera/Action	Time (Frames)	Video Content	Audio
1(Part1)	Wide shot with lateral movement	10	The tv robot came to the X-Star	
2	Close up of TV with zooming	5	TV looked into the distance,	
3	Shot of RADIO with zooming	5	a radio robot standing next to the fire	
4	Close up of RADIO	6	The radio robot was very sad because her wire was broken and there was no sound and music	
5	Wide Shot	6	TV walked over to Radio and pointed to Radio's broken wire.	
6	Close up of RADIO's head	3	Radio's broken wire.	
7	Close up of TV's face	6(540-900)	Tv[I can help you]	
8	**Shot of RADIO	7(48s)	Radio looked up, Her face shows [No signal] [Play 🎵 Radio].	
9	Close up of TV	15(1320-2220)	TV pointed to his head, warm-hearted, tv robot saw radio's display and hurried to help her. Tv robot's screen shows [Searching][BBC NEWS, radio is facing to be completely eliminated, the era of television is gradually approaching]	
10	**Shot of RADIO	7(3780-3960-4140-4200)	what radio was actually displaying was [Play 🎵 Radio gaga], Radio hang her head, so sad.	
11	Close up of TV	4(2640-2880)	TV realized his mistake, quickly turned off the screen. [I am sorry]	
12	Close up of RADIO	7(4440-4560-4860)	Radio looked up, Radio was embarrassed and redisplaying [Play 🎵 We are the...].	
13	Close up of TV	16(3300-3900-4260)	TV pointed to his head, This time, again, tv did not wait for her to completely display then started playing [Searching][We are facing the end of the world.. ..]. After playing it for a while, suddenly TV realized	
14	Close up of RADIO	7(5820-6240)	Radio looked up, what the radio displayed was [Play 🎵 We are the champions]	
15	Close up of TV	7(4680-5100)	Tv was very sorry about that, this time, he decided to wait for the radio to completely display	
16	Close up of RADIO	7(6660-7080)	Radio showed [Play 🎵 Billie Jean] [❤️ Michael Jackson❤️]	
17	Close up of TV	10(5520-6120)	Tv displayed [Searching] then played the MV of Billie Jean, and danced with the music.	
18(Part2-1)	Wide shot with lateral movement	10	Radio shook her head happily, [🎵🎵🎵🎵] The radio was also very happy and thankful.	
19(1-2)	Shot of RADIO with lateral movement	4* (600-900)	Radio shook her head happily.	
20(2)	Wide shot of TV with moving down	10* (900-1440)	TV dancing	
21(3)	Close up of TV	12(1440-1560-2160)	Suddenly, Tv received an urgent notice[All TV robots back to the camp NOW, urgently].	
22(4)	**Close up of RADIO	5(2160-2460)	Radio was too sad to let him go.	
23(5)	Shot of TV	6(2460-2820)	Tv hesitated finally turned and left.	
24(6)	Close up of RADIO (focus distance 1.5-2.7)	7(2820-2917-3240)	Radio bowed her head and was very sad	
25(7)	**Close up of TV's face	8(3240-3720)	TV stopped suddenly and thought for a moment	
26(8)	Wide shot		SUN	
27(Part3-1)	Shot of TV with zooming	9	TV left the X-Star, the wire on his head was broken.	
28(2)	Shot of Radio with zooming		[Signal connection successful] [Play 🎵 Billie Jean] Radio got a new wire and continued to play the song.	
29(3)	Close up of RADIO's wire		New wire	

2) Camera Switch Scripts in Unity

- I chose the Unity3D to compose all the parts of our animation. The first problem is 'how to switch the multiple shots in the timeline? '.
- This problem was solved by the Youtube tutorial (<https://www.youtube.com/watch?v=Tg-ydfLEPak>). This is thanks to Bruno's advice.
- The Script

```
public class CameraSequences_1 : MonoBehaviour
{
    public GameObject Cam1;
```

```

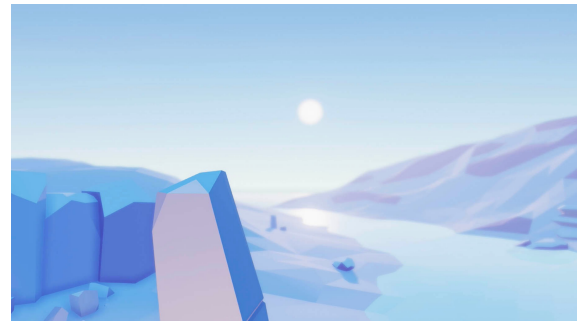
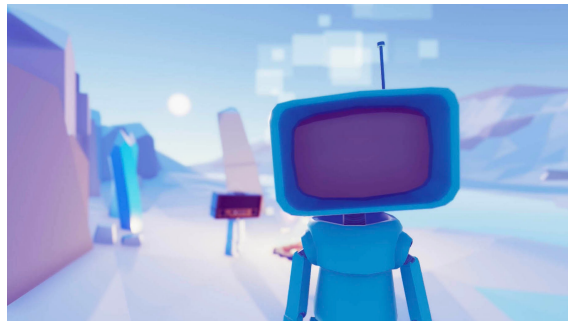
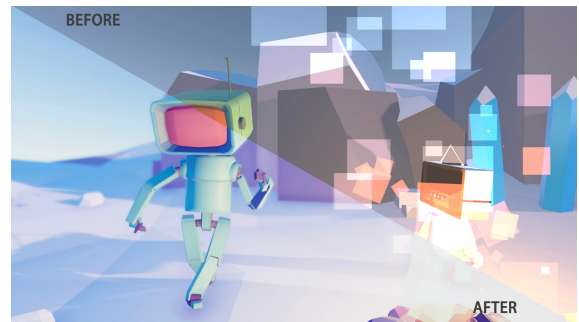
public GameObject Cam2;
public GameObject Cam3;

void Start() {
    StartCoroutine(TheSequences());
}
IEnumerator TheSequences()
{
    yield return new WaitForSeconds(10);
    Cam2.SetActive(true);
    Cam1.SetActive(false);
    yield return new WaitForSeconds(4);
    Cam3.SetActive(true);
    Cam2.SetActive(false);
}
}

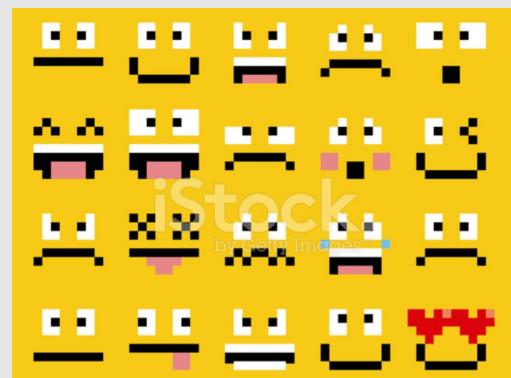
```

3) Scene Art Design

- The story is lovely and unrealistic, so the scene art is decided as Low-Poly style.
- X-Star is a fictional polar and icy world, the main colors are white and blue.
- Several scenario models were referenced, and the Unity Assets Store ([License.pdf](#)) based scene material was used as the main style.
- Post-Processing(see pic.1,2) brings a fuller picture color, and the adjustment of the focal distance of the lens makes the picture more layered.



4) The Face Emotions Reference (Pixelate)



Week5 (30 Mar.)

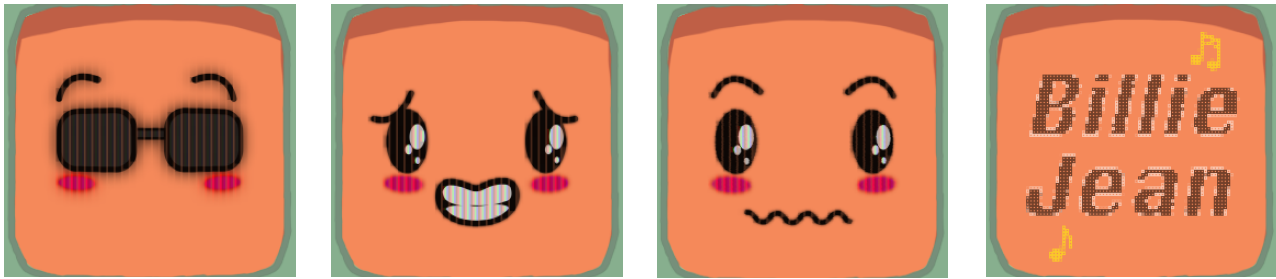
* **Draft Version Rendering**

Week6 (20 Apr. - 26 Apr.)

* **2D animations of character expression have been finished in Adobe AfterEffects**

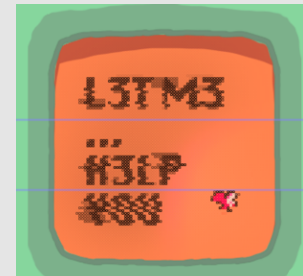
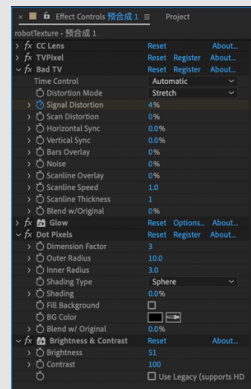
1) **Drawing 2D expressions of TV robot in Photoshop**

- The TV Robot has 20 emotions displayed on his face, all of them is designed in Photoshop firstly, and exported as PNG files for each element;



2) All 2D animations are designed in AfterEffects

- In order to show the style of a real television screen, I add some special effect plug-ins such as **TVPixel**, **Dot Pixels**, **Bad Tv** and **Glow**.
- The final look is more pixelated and grainy, with occasionally shaking to emulate the effect of bad signal.



3) Export to PNG sequences for applying on the Unity textures

Week7 (27 Apr. - 3 May)

*** 2D emotion animations have been successfully applied to Unity by scripting**

1) Thanks for the guidance of John, I wrote a script that allows 2D image sequences can be played on the texture of robot's face.

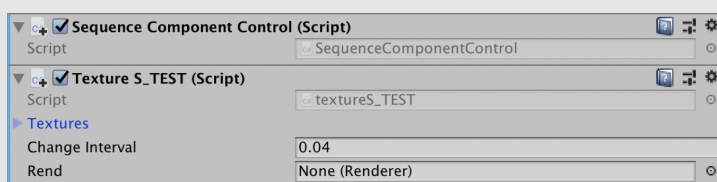
```
public class textureS_TEST : MonoBehaviour
{
    public Texture[] textures;
    public float changeInterval = 0.33F;
    public Renderer rend;

    void Start()
    {
        rend = GetComponent();
    }

    void Update()
    {
        if (textures.Length == 0)
            return;

        int index = Mathf.FloorToInt(Time.time / changeInterval);
        index = index % textures.Length;
        rend.material.mainTexture = textures[index];
    }
}
```

2) Then, I wrote a switcher script to control the playback time of the image sequence.



```
public class SequenceComponentControl : MonoBehaviour
{
    private textureS_TEST Switcher;
    void Start()
    {
        Switcher = GetComponent();
    }

    void Update()
    {
        if (Input.GetKeyUp(KeyCode.Space))
        {
            Switcher.enabled = !Switcher.enabled;
        }
    }
}
```

Week8 (4 May - 10 May)

* Record 4K video clips by Unity Recorder, and adjust the duration of each movement and 2D animation



Week9 (11 May - 17 May)

* Editing and detailed adjustments have been made in Premiere, and the opening LOGO animation has been produced in AfterEffects

1) Editing

- There was no trouble in editing because of the clear shooting script. Everything is processing followed the shooting script, except for some adjustments in duration.

2) Opening LOGO animation

- Since the story was happened on a future planet, I wanted the logo animation to be simple, and have a sense of technology and future;

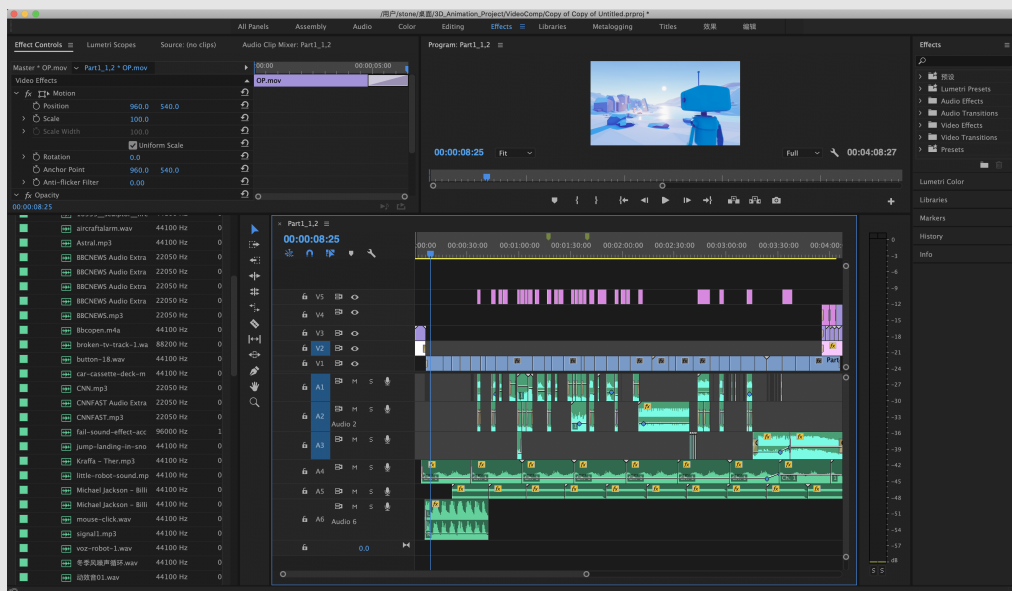
- The font **Heimdal** has been applied to not only the LOGO, but also the whole animation;



Week10 (18 May - 24 May)

* Background music and sound effects have been added, and the subtitles are also finished

- Part of the audio references form freesound.org and ear0.com



Week11 (25 May)

* Final Version Rendering



- Click to watch

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