

# ## AI-Generated Self-Portraits

**Time:** 2019

**Material:** digital w/ programming

**paper referenced:** "UGATIT: Unsupervised Generative Attentional Networks with Adaptive Layer-Instance Normalization for Image-to-Image Translation" (2019)

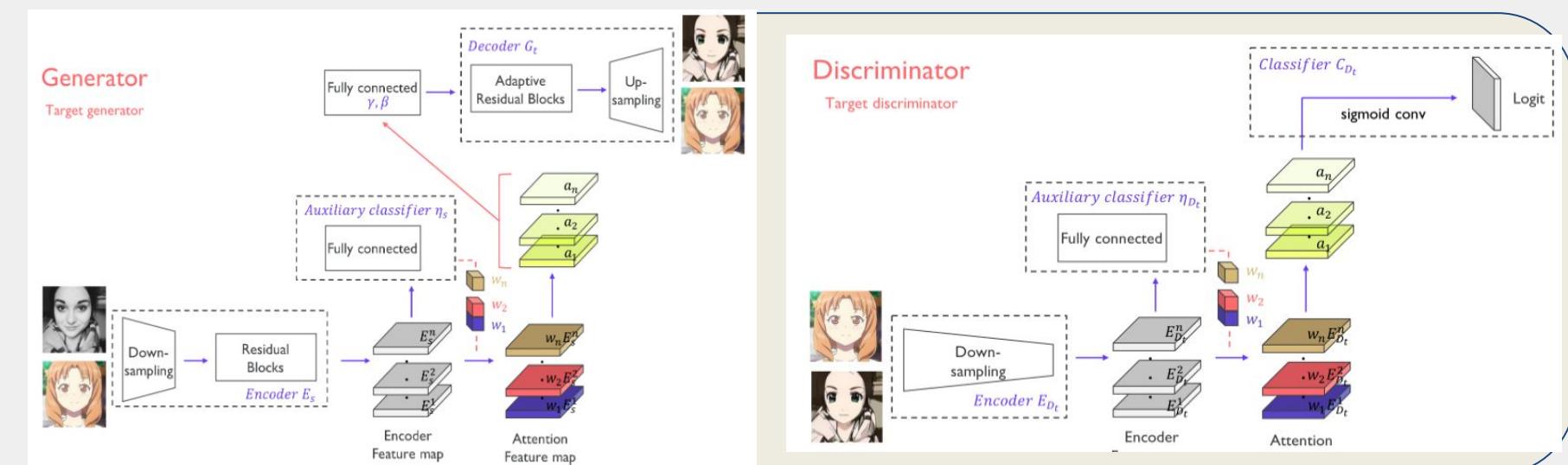
**dataset used:**

- animeface-character-dataset
- selfie-dataset

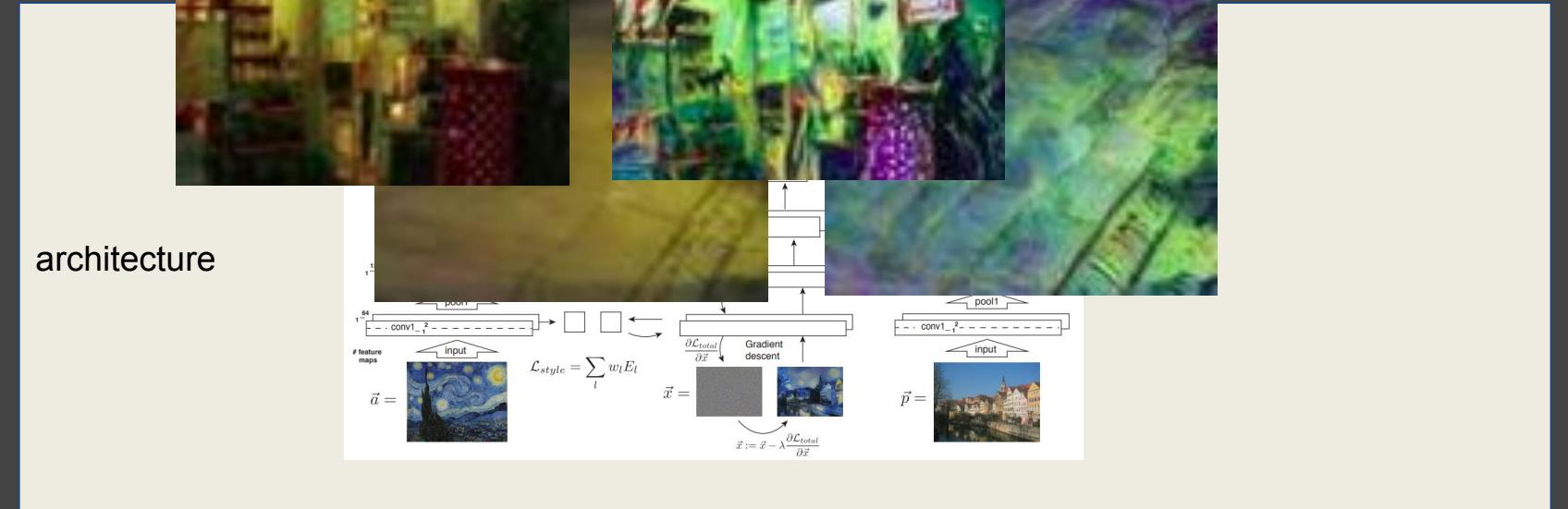


Different people have different perspective on things. This is literally how an Artificial Intelligence sees me.

I implemented methods in an unpublished paper in Computer Vision (CV) to train and deploy my neuronal network. The resulting images are generated by code. (training process shown on the network architecture diagrams)



**network architecture:** Generative Adversarial Network (GAN)



**network\_architecture:** Convolutional Neural Networks

## ## AI as My Brush: Starry Town

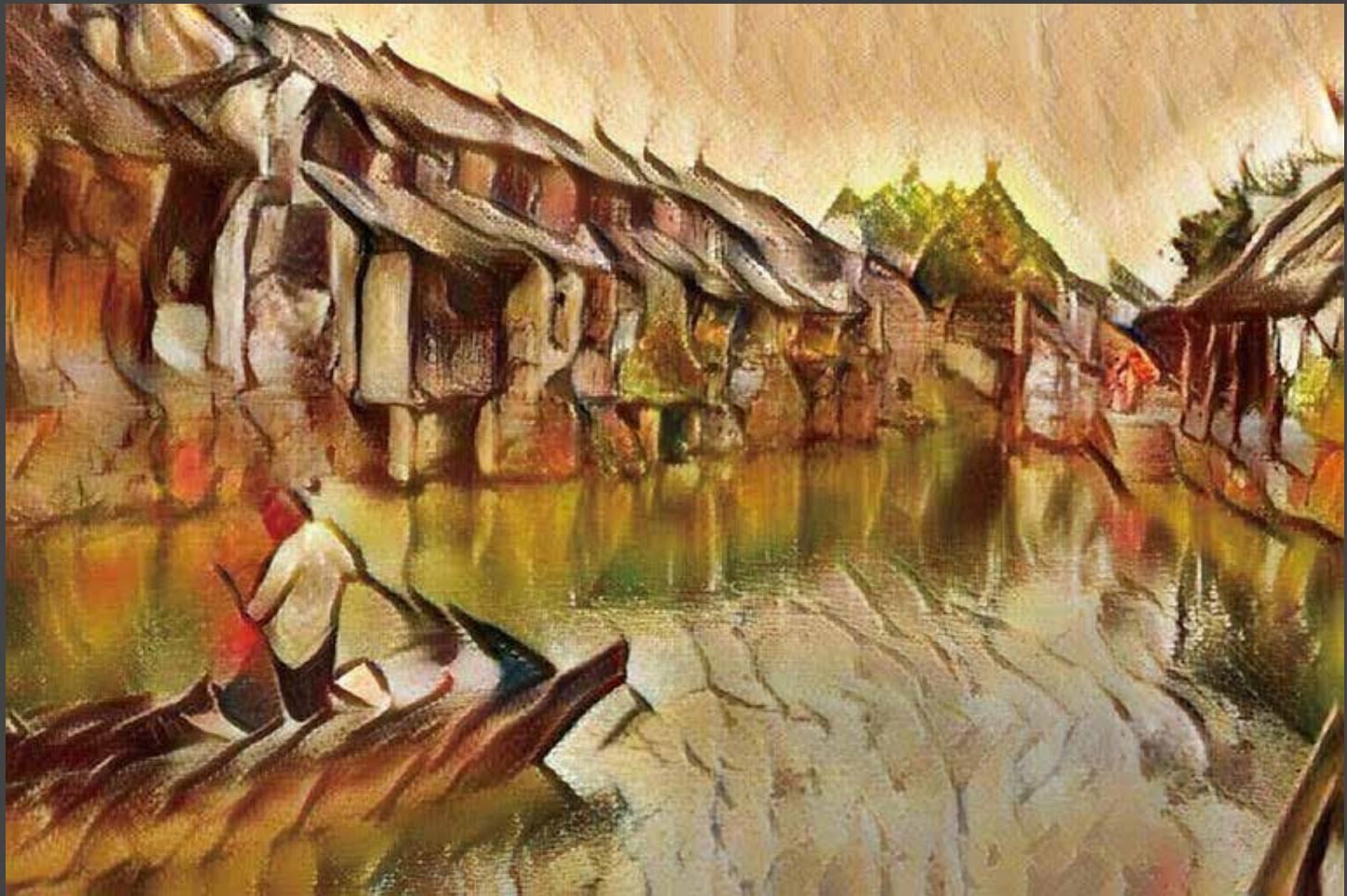
Time: 2019

Material: digital w/ programming

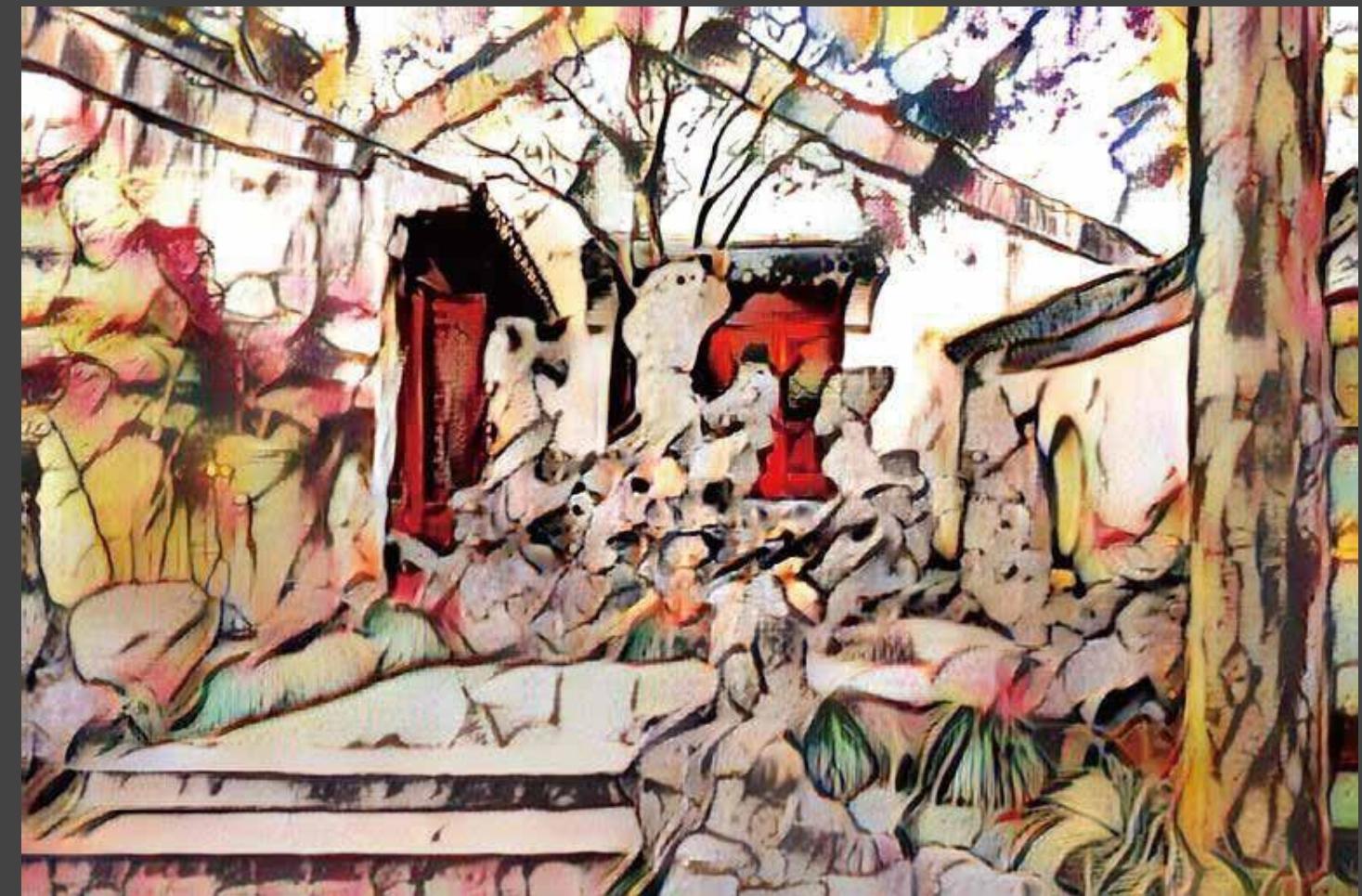
**paper\_referenced:** Image Style Transfer Using Convolutional Neural Networks (CVPR 2016)

Walking in an old town under the sunset,  
shops lit up into the bustle,  
only with the stars still.





This is an old town: People who live outside want to get in, while people who live inside want to get out.



## ## AI as My Brush: Water Township

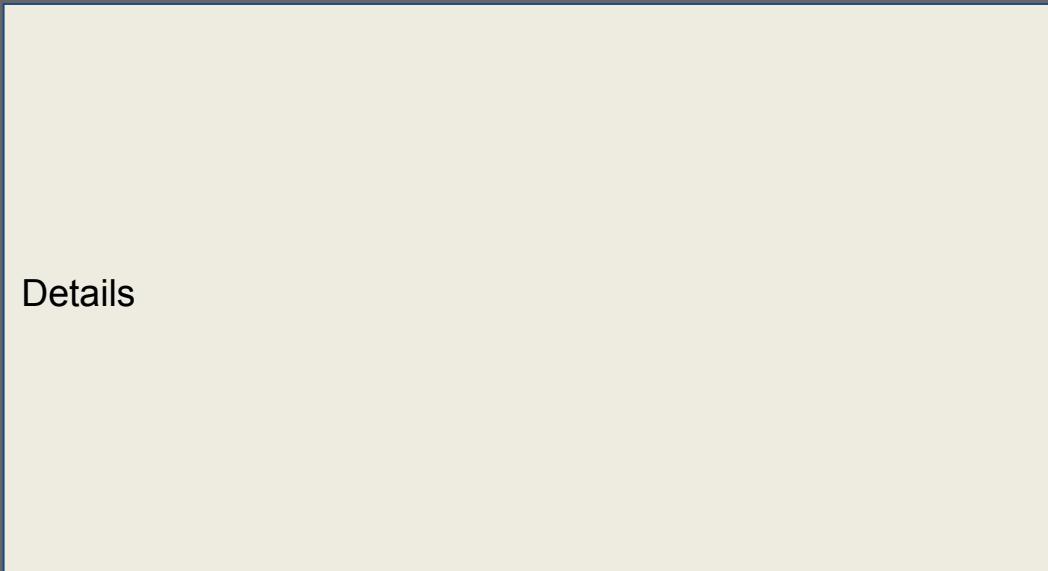
## **## Mechanical Chains: Metallic Bird**

Time: 2019

Material: Aluminum Foil, Arduino,  
Servo w/ programming

...

Details\_head



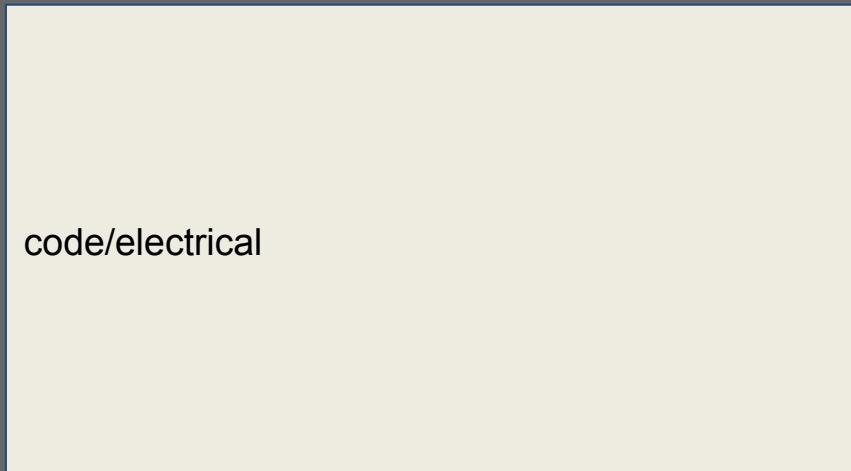
**actual\_3d\_sculpture**

# **## Mechanical Chains: Metallic Bird (Design)**

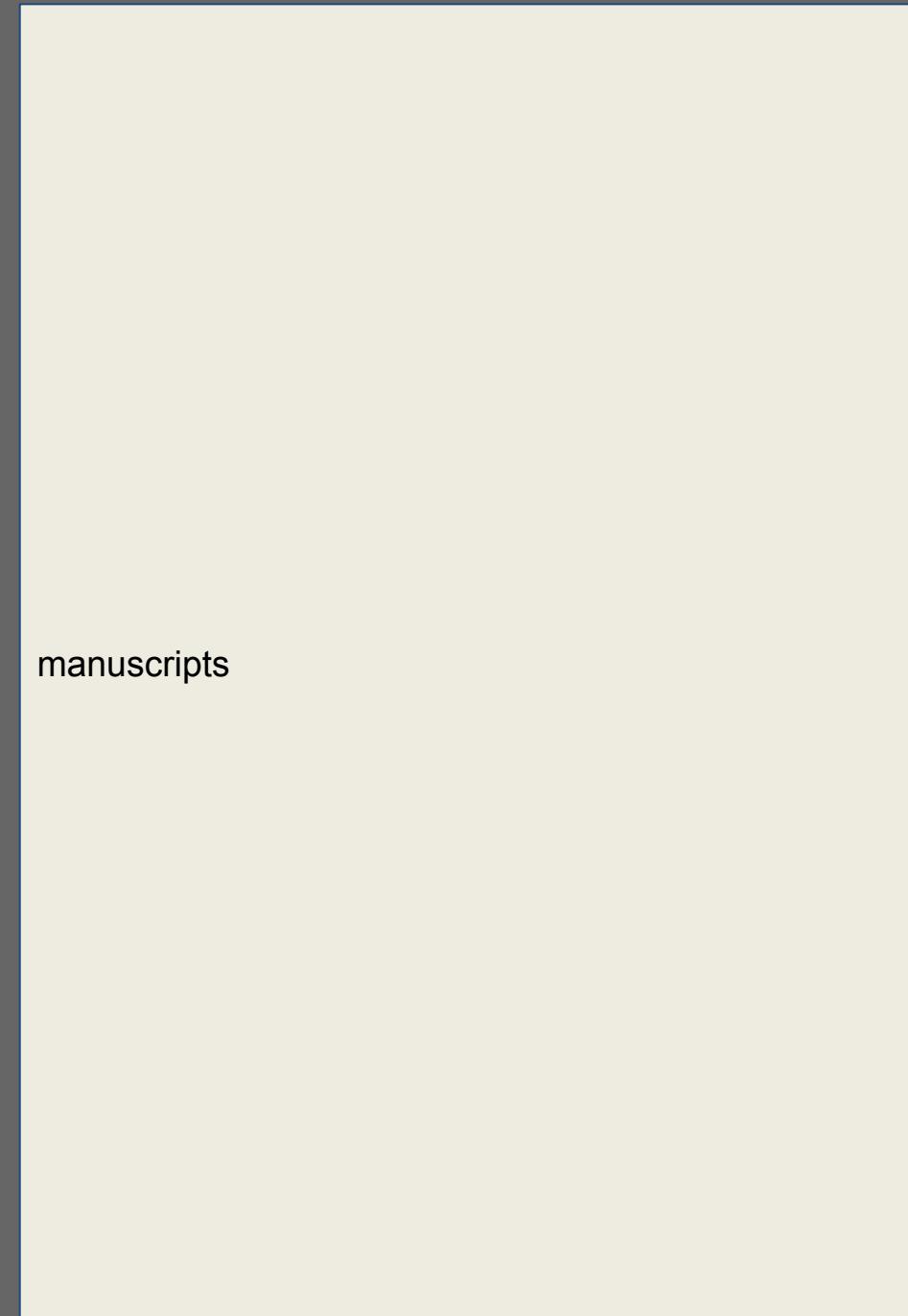
Time: 2019

Material: Aluminum Foil, Arduino, Servo w/  
programming

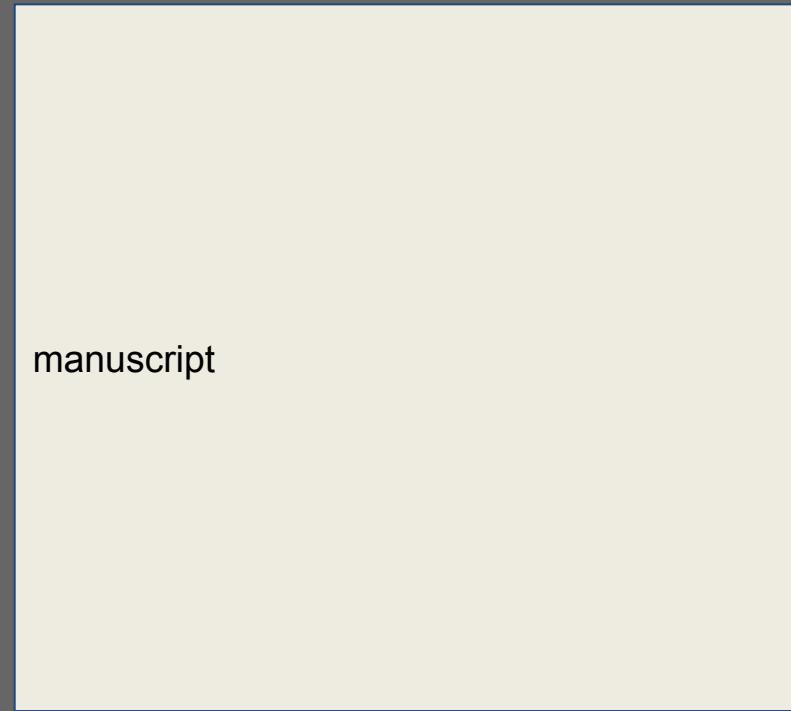
...



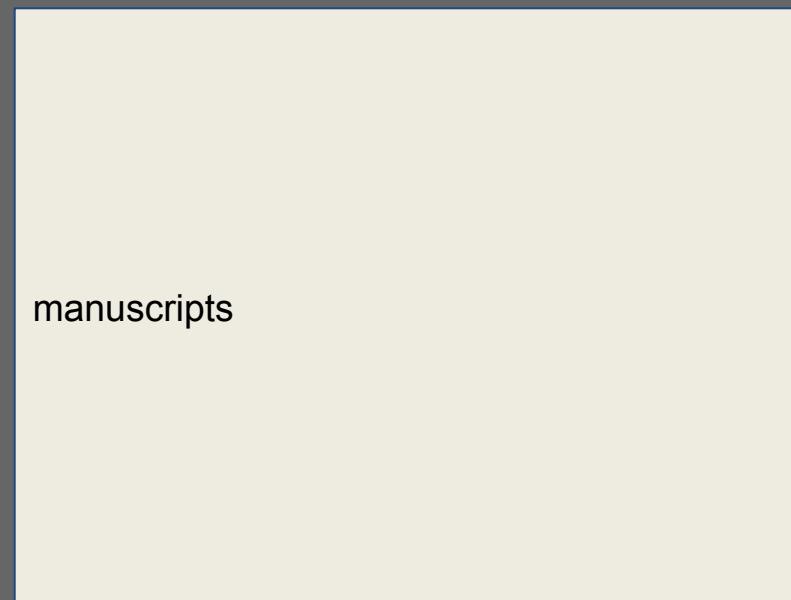
code/electrical



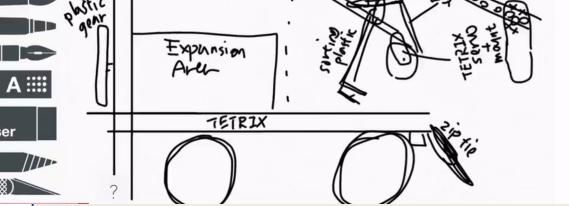
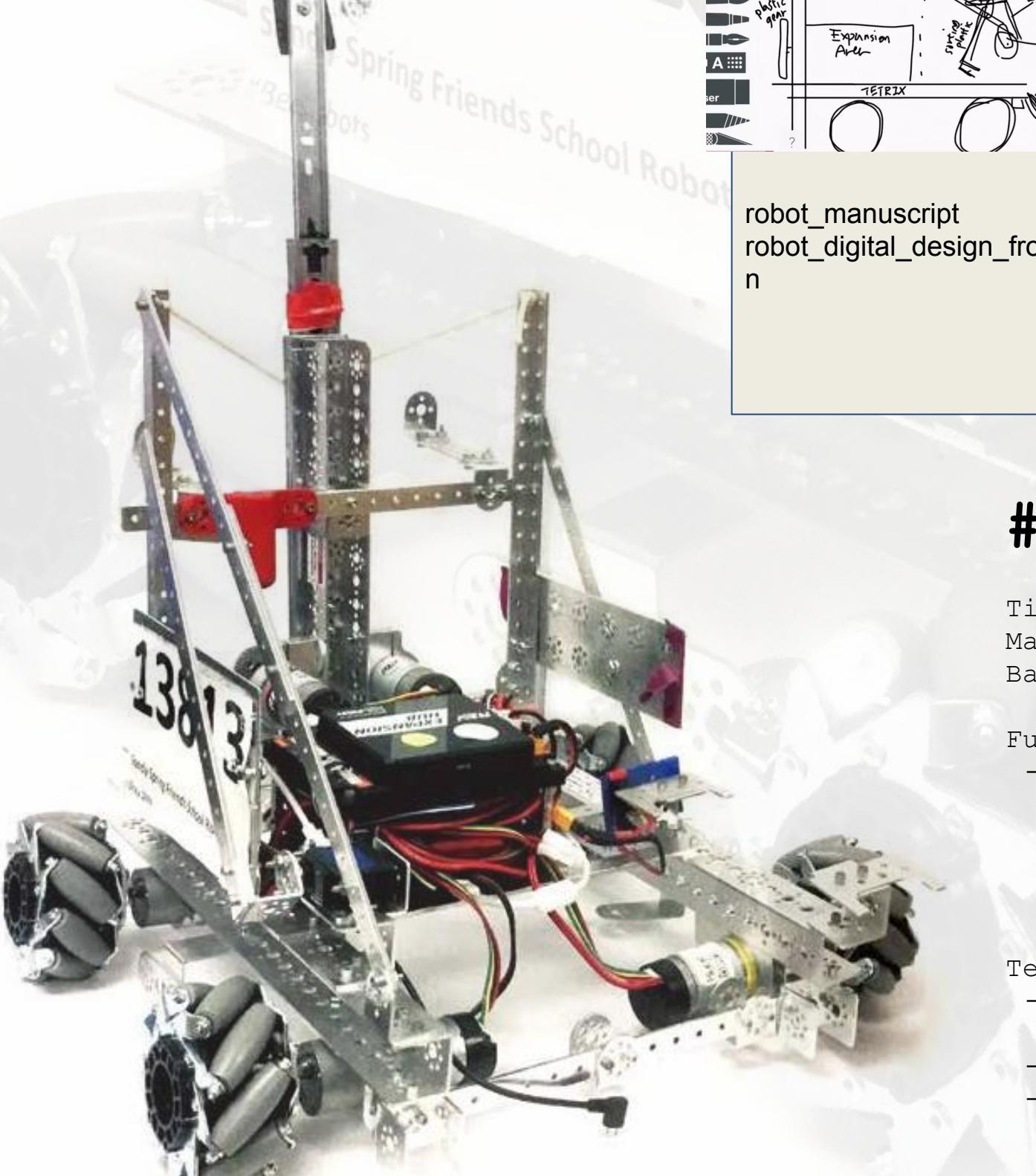
manuscripts



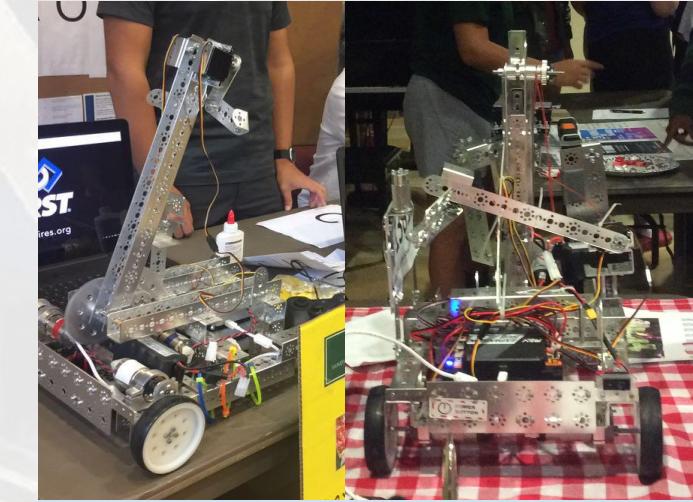
manuscript



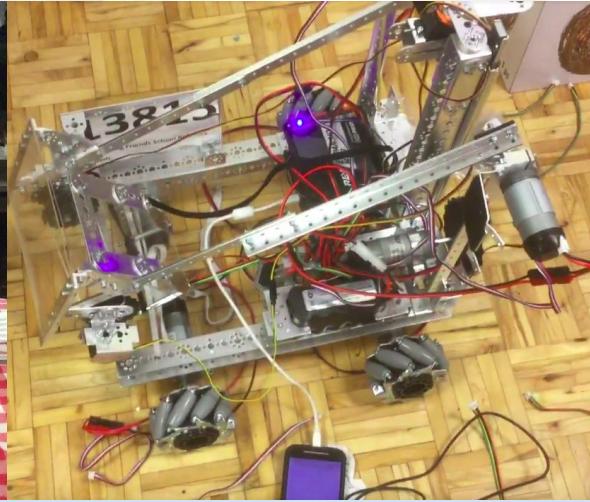
manuscripts



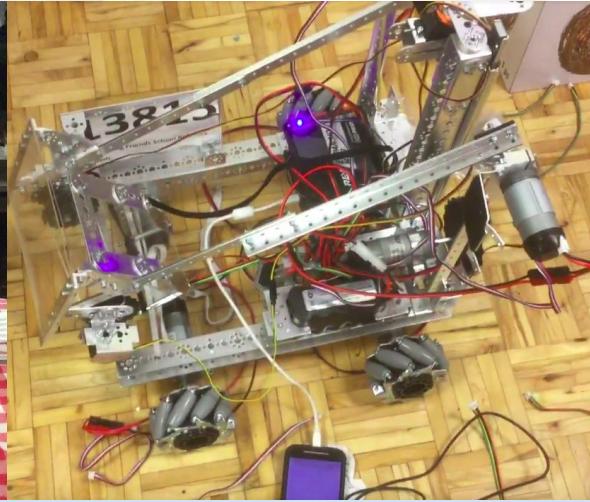
robot\_manuscript  
robot\_digital\_design\_from\_aron



Generation 1



Generation 2



Generation 3

## ## BeestBot

Time: 2018-2019

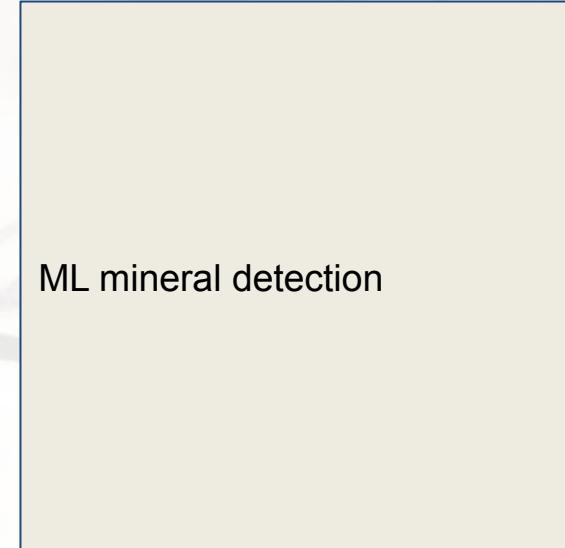
Material: Steel, Motors, Servos, Rubber Bands, Sensors, 3D printed materials...

Function:

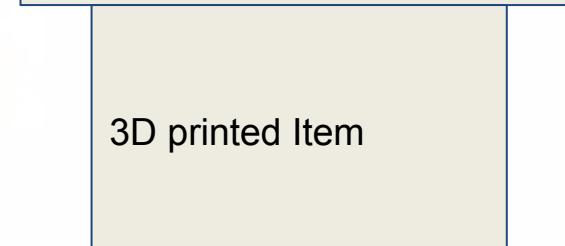
- This autonomous robot is capable of picking and transporting "gold" and "silver" minerals; lifting itself onto a "rocket"; and landing to the "moon".

Technology:

- I deployed machine learning for "minerals" detection
- Motor Gear Ratio
- 



ML mineral detection



3D printed Item





## ## Silicon

Time: 2017

Material: Ink, Watercolor

This piece reflect my projection of life based on silicon. As lives on earth are mostly based on carbon, silicon lives can only exist in high pressure environment because of the solid nature of silicon dioxide. Based on the chemical properties, I also predict that silicon lives move much slower since the rate of reaction with oxygen is slow. These chemical properties can hugely affect the features and lifestyle of organisms as my manuscripts show.

It is fascinating how hydrogens can become humans given enough time.

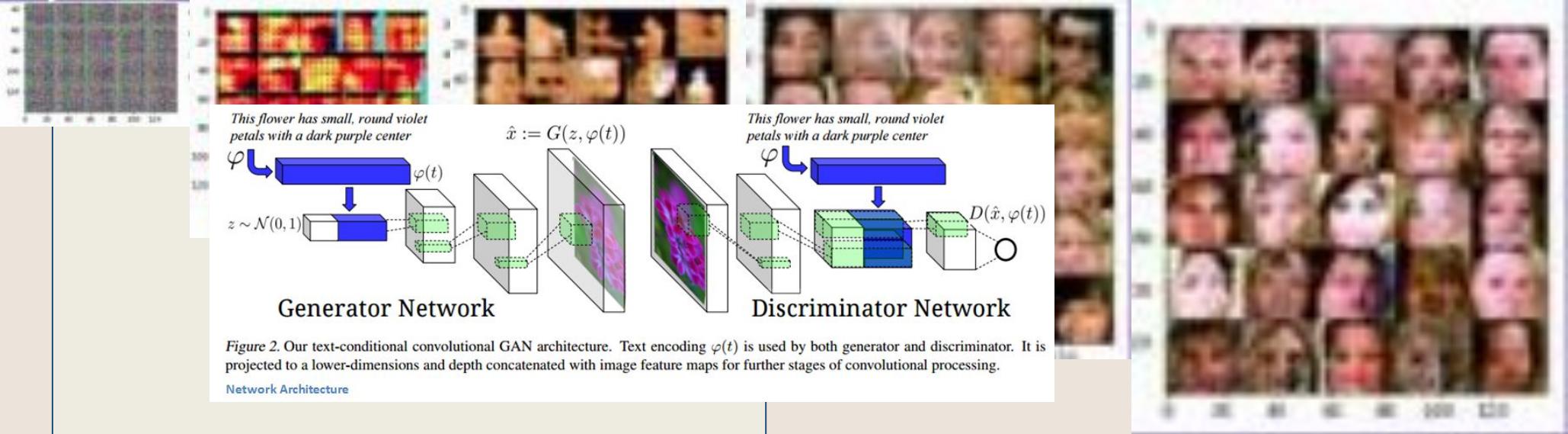
record my idea of possible life forms based on Silicon instead of Carbon. The chemical properties of silicon based compound gives their species unique features like having slow reaction time, living in water, and requiring high pressure. These drawing demonstrates and record my idea of how these life forms with specific properties above would look like if they exist.



这个是对话框:

第二页也是

record my idea of possible life forms based on Silicon instead of Carbon. The chemical properties of silicon based compound gives their species unique features like having slow reaction time, living in water, and requiring high pressure. These drawing demonstrates and record my idea of how these life forms with specific properties above would look like if they exist.



## ## Fake News by AI

network\_architecture

Material: digital

**paper\_referenced:** "Generative Adversarial Networks" (2016)

**dataset\_used:**

- celebA

These paintings done by my AI algorithms was generated completely from random noises inputs, which means that these people do not exist on earth.

I used this piece to show my classmates about the power of AI and how the growing technology can create problems to our society.



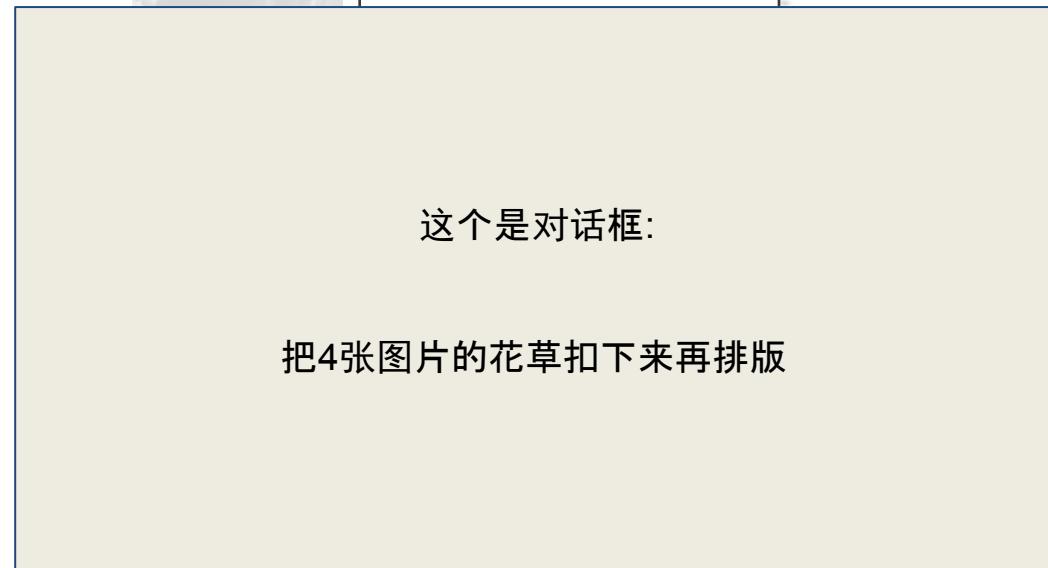
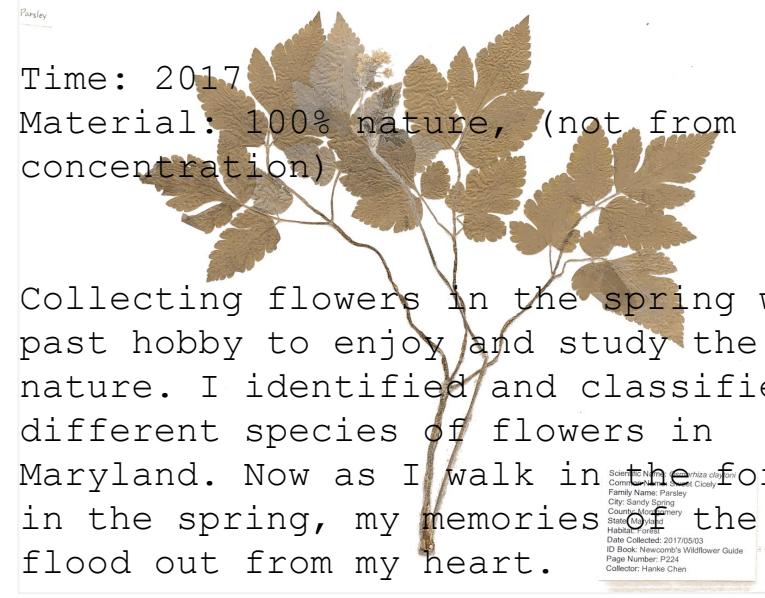
这个是对话框：

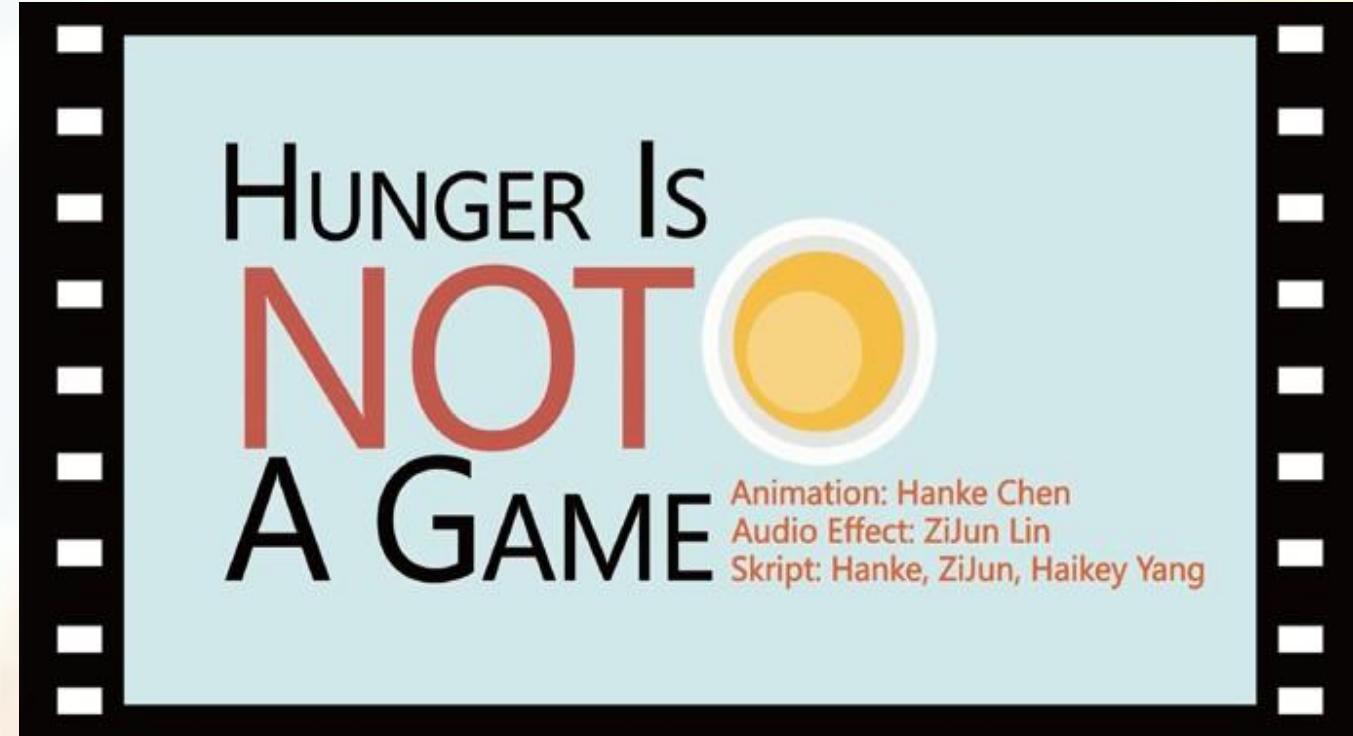
Imagination: Zoom - 还没完成的

这个是对话框:

From Life - 还没完成的

# ## Species of Flower





## ## Hunger Is Not a Game

Time: 2018

Material: digital

Length: 1 min

**tools-used:** Adobe AfterEffects, Adobe Illustrator

I animated this Public Service Announcement about how the growing world population and unbalanced food distribution could potentially cause hunger in certain countries. Our team proposed two solutions: creating food bank and promote women's education.

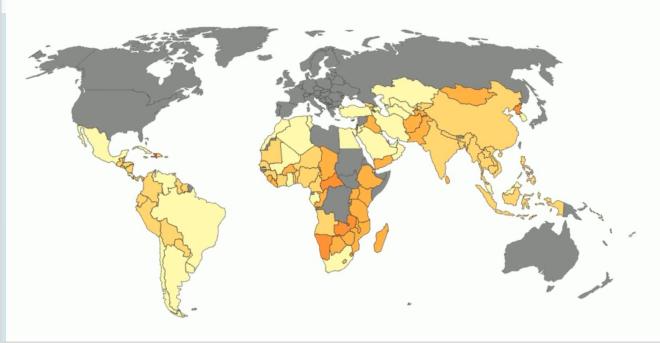


World hunger again on the rise, driven by conflict and climate change, new UN report says

815 million people now hungry – Millions of children at risk from malnutrition

News release

15 SEPTEMBER 2017 | ROME – After steadily declining for over a decade, global hunger is on the rise again, affecting 815 million people in 2016, or 11 per cent of the world's population.

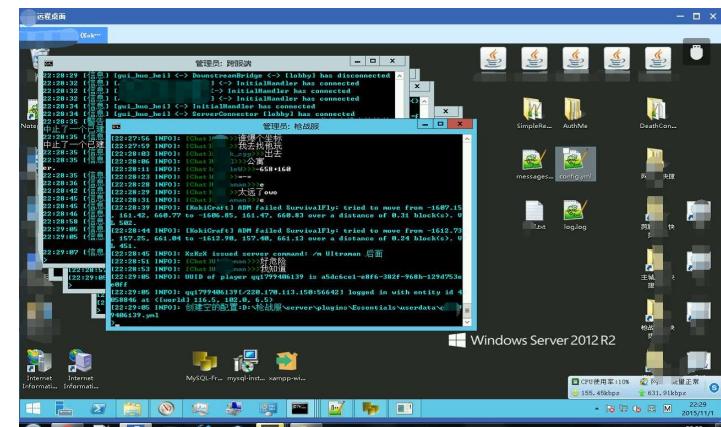




A MINECRAFT GTA SERVER 哥吉服  
**KOKICRAFT**  
原版纯净 加入及玩

Own the Best GTA Minecraft Game Server in Mainland China

2014-2018  
First Business Created (founded, hosted and coded) by Myself in 2014 , when I was 13 years old;  
Total 344941 players, \$500 USD/Month  
2 years earlier than another famous chinese game server "My World"



**Hanke Chen**

How romantic it is to learn things together with my AI model on weekends — [2019/02/02]

- Rockville, MD
- Technical Website
- Twitter
- GitHub
- Instagram

Hanke Chen

How romantic it is to learn things together with my AI model on weekends — [2019/02/02]

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- Technical Website
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- GitHub
- Instagram

Graphical Summary of My Skills and Activities

```

graph LR
    subgraph Visual_Art [Visual Art]
        SculptingWoodworking[C]
        PaintingCeramics[C]
        FlashAnimation[Flash Animation]
        DesigningLogos[Designing Logos]
    end
    subgraph Robotics_Club [Robotics Club]
        RoboticsCompetition[Robotics Competition]
        StanfordSummerSchool[Stanford Summer School]
        RoboticsVisionEngineer[Robotics Vision Engineer]
        RoboticsRobotics[Robotics at UMD]
    end
    subgraph Kaggle_AI_Contest [Kaggle AI Contest]
        KaggleContest[Kaggle AI Contest]
        UDACITYAI[Udacity AI Courses]
        GoogleCodeIn[Google Code In]
        GoogleScienceFair[Google Science Fair]
        KaggleContest --> UDACITYAI
        KaggleContest --> GoogleCodeIn
        KaggleContest --> GoogleScienceFair
    end
    subgraph Machine_Learning [Machine Learning]
        ApplicationsAI[Applications of AI in Different Fields]
        ComputerVision[Computer Vision]
        ImageClassification[Image Classification]
        ObjectDetection[Object Detection]
        ImageMasking[Image Masking]
    end
    subgraph Self_Learning_Programming [Self-Learning Programming]
        SchoolsComputerScience[School's Computer Science Elective]
        GoogleCodeIn[Google Code In]
        SelfLearningProgramming[Self-Learning Programming]
    end
    subgraph KokiCraftGameDevelopment [KokiCraft Game Development & Marketing]
        KokiCraftGameDevelopment[KokiCraft Game Development & Marketing]
        StanfordSummerSchool[Stanford Summer School]
        RoboticsRobotics[Robotics at UMD]
    end
    subgraph Middle_School [Middle School]
        FlashAnimation[Flash Animation]
        DesigningLogos[Designing Logos]
        UDACITYAI[Udacity AI Courses]
        GoogleCodeIn[Google Code In]
        SelfLearningProgramming[Self-Learning Programming]
        KaggleContest[Kaggle AI Contest]
        ComputerVision[Computer Vision]
        ImageClassification[Image Classification]
        ObjectDetection[Object Detection]
        ImageMasking[Image Masking]
    end
    subgraph High_School [High School]
        PaintingCeramics[Painting & Ceramics]
        SculptingWoodworking[Sculpting & Woodworking]
        RoboticsCompetition[Robotics Competition]
        StanfordSummerSchool[Stanford Summer School]
        RoboticsVisionEngineer[Robotics Vision Engineer]
        RoboticsRobotics[Robotics at UMD]
        KaggleContest[Kaggle AI Contest]
        UDACITYAI[Udacity AI Courses]
        GoogleCodeIn[Google Code In]
        SelfLearningProgramming[Self-Learning Programming]
        ComputerVision[Computer Vision]
        ImageClassification[Image Classification]
        ObjectDetection[Object Detection]
        ImageMasking[Image Masking]
    end
    subgraph Kindergarten [Kindergarten]
        PaintingCeramics[Painting & Ceramics]
        FlashAnimation[Flash Animation]
        DesigningLogos[Designing Logos]
        SchoolsComputerScience[School's Computer Science Elective]
        UDACITYAI[Udacity AI Courses]
        GoogleCodeIn[Google Code In]
        SelfLearningProgramming[Self-Learning Programming]
        KokiCraftGameDevelopment[KokiCraft Game Development & Marketing]
        ComputerVision[Computer Vision]
        ImageClassification[Image Classification]
        ObjectDetection[Object Detection]
        ImageMasking[Image Masking]
    end
    
```

**Robotics**

Robotics is a conglomeration of Engineering, Computer Science, and Artificial Intelligence. AI is its brain whereas engineering creates its body.

**Artificial Intelligence for Robotics: Reinforcement Learning on Robotics**

Image: Reinforcement Algorithm and the Robot

Time: 2018

Achievements: Reinforcement Learning Algorithm

In this summer school, I followed Stanford CS231n curriculum and programmed a robot capable of doing tasks like dancing, sweeping the floor, and solving a maze. I also used Reinforcement Learning to optimize the path taken with dynamic risk calculations. This technology I programmed is important because it allows the

**Art**

What is art? To me, art is a way of thinking. It is a representation of the nature, a dimensional interpretations, a sensitivity to shapes and color. Art is an idea, an idea that brings big innovations.

**PSA Animation: Hunger is not a Game**

Video: PSA Animation

Time: 2017

Material: After Effects

In my sophomore year, I cooperated with my friends and made this PSA animation for worldoffullion.org competition, a student Video Contest. The video focuses on making global awareness of hunger and raising several solutions to this problem. My teammates focused on creating the scripts while I animated the video.

**Miscellaneous**

Graphical Summary of My Skills and Activities

PSA - Hunger is not a game

Video: PSA Animation

Time: 2017

Material: After Effects

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Hanke Chen

How romantic it is to learn things together with my AI model on weekends — [2019/02/02]

- Rockville, MD
- Technical Website
- Twitter
- GitHub
- Instagram

# ## Webpage Design

Time: 2018

Material: digital w/ programming

**tools-used:** ruby, html, css, jekyll

**link:** <https://chenhanke.me>

This general web page coded by myself showcases every aspect of me from AI Research, Robotics, to Art and Game Designs.

iPad

Hanke Chen

About Me Academic/AI Research

Robotics Art Miscellaneous

iPhone

Hanke Chen

About Me Academic/AI Research

Robotics Art Miscellaneous

**Responsive UI Design:** automatic resize on phones

# ## Brownie UI: A Personal Tech-Webpage

Time: 2017-now

Material: html, css

link: <https://www.kokecacao.me>

This geek-style minimalistic design showcases my personal values toward lives to my friends. The use of line, shape, hue, and saturation gives the viewer a sense of safety.

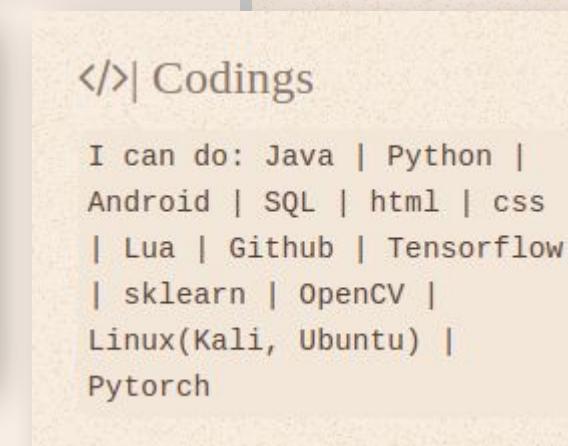
## 0x05 Global Deployment — Sounds big, but it means social-network

[Github] [Bilibili] [Instagram]  
[Kaggle] [Twitter]  
[Zhihu] [WeChat]  
[Youtube] [Email]

### 👁| Computer Vision

Currently taking Udacity's Deep Learning for 2nd year.  
Doing some Kaggle competitions. Studying CNN  
...

(details shown)



A screenshot of a web browser displaying a personal webpage. The page has a light beige background. At the top right is a circular profile picture of a person with blonde hair and a green mask. Below the profile picture, the name "Koke Cacao" is displayed in a large, bold, black font. Underneath the name is the tagline "Wanting to know everything, but time is limited — [2018/07/18]". On the left side of the page, there is a section titled "🎮| Game Design" with the text "KokiCraft is my first work for game design Tt". At the bottom left, there is a sidebar with links to various social media platforms: Github, Bilibili, Instagram, Kaggle, Twitter, Zhihu, WeChat, Youtube, and Email. The overall design is minimalist and modern.

Other Languages: [简体中文]; [English]; [繁體中文]; [日本語]; (WARNING: English is the most up-to-date version.)

My other websites: [RoboticsClub]; [ArtClub]; [Blog]; [Website];

MyProperties: Quantum delay experiment's strange bug | Extremely Introvert, but talkative with people who share same interests with me | Love Science | A Nerd | Tech Person who love watching anime | Almost never play video games | Yan Text<sup>('◡'\*)</sup> | Sublime Text is the world-best-looking text editor (╯#-皿-)╯~~ (still learning the useless Vim) | Pytorch is the best framework in ML | Using Ubuntu as desktop | Occam's razor is the fundamental theory of SCIENCE!

This MeaningOfLife.java file is where all my power came from:

```
private boolean stillAlive = true;  
private int lastSecond = 1928891298174;  
private void live(Energy e) {  
    while(stillAlive) {  
        if ((this.getDream != null) && (lastSecond > 0)) {  
            this.getDream().createArtificialIdiot();  
        }  
        lastSecond++;  
    }  
}
```



X



## ## Class Logo Design

Time: 2016

Material: digital

My design of the logo for my class includes the meaning of "growth", "love", and "peace". The class adopted my design onto our class t-shirt.





The Night



# The Night

A Rubber Print Board with Black Paint



# The Music of Nature Lines

Photography taken in Suzhou-Guilin-Japan

2017-2018



# Visualized Chaos Theme Music

