YI FEI CHENG

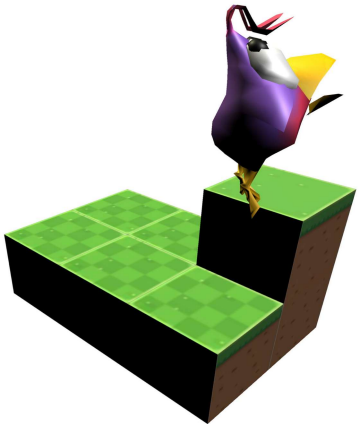
COMPUTER SCIENTIST
HCI RESEARCHER
ARTIST

ABOUT ME

I am passionate about bridging the gap between the physical and virtual worlds to produce new, enriching, interactive experiences and to extend our current capabilities of artistic creation. I am heavily engaged in computer science and engineering research. My most recent work is focused on mixed reality. My past work was more deep-learning oriented. I also paint, draw, and occasionally design buildings.

I was born in Singapore, grew up in Shanghai, and am pursuing my bachelor's degree in Swarthmore College, PA. I am currently spending a year at Wadham College, Oxford as an exchange student.

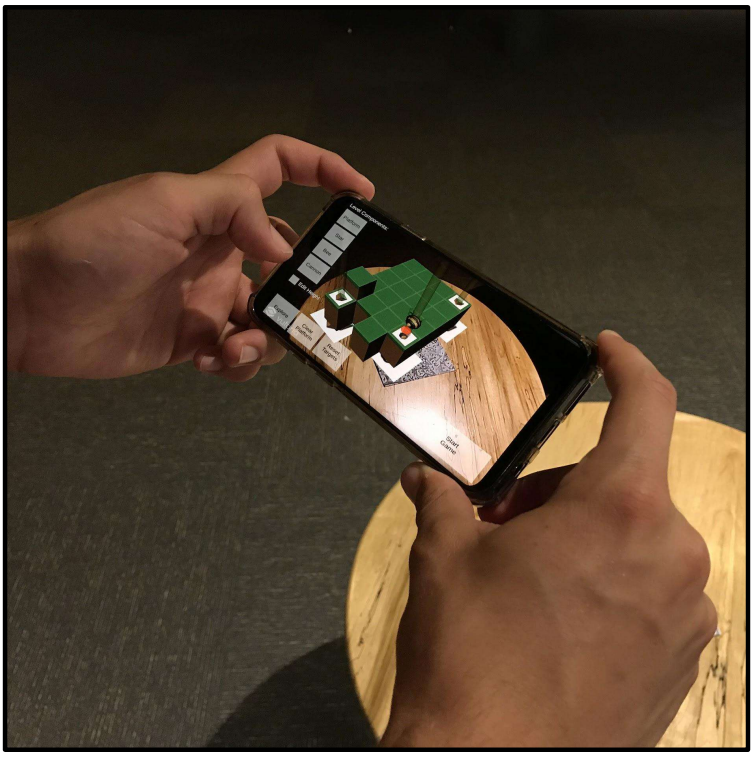
TECHNICAL PROJECTS

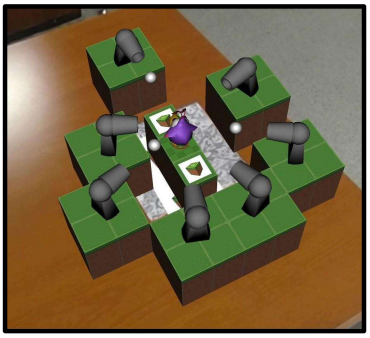


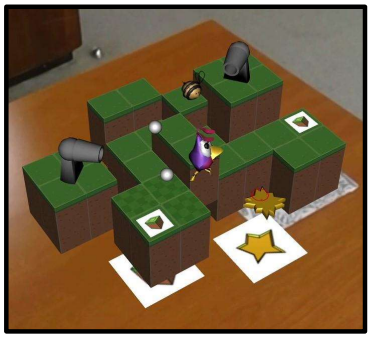
THE Q*BIRD
LEVEL DESIGNER (2019)

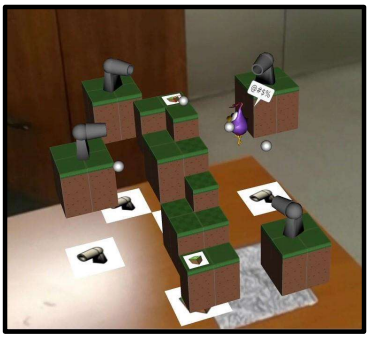
Q*bird is a augmented reality game and level designer inspired by the 1982 game, Q*bert. In Q*bird, the player must visit every cell in the game while avoiding enemies. To create a new level, users place game elements using virtual cards. The system then generates the remainder of the level, ensuring that it is navigable. Users can edit these levels by moving the created geometry. To play, the user can drop a character anywhere in the level.

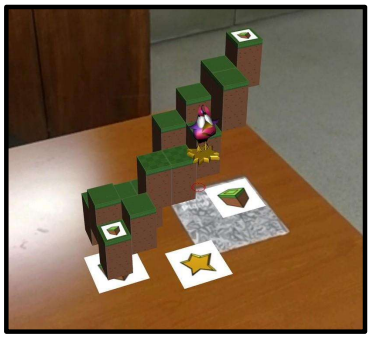
The system is implemented the Unity3D game engine and Vuforia SDK. The current implementation is being adapted to answer research questions about virtual character control and user preferences for platform levels.



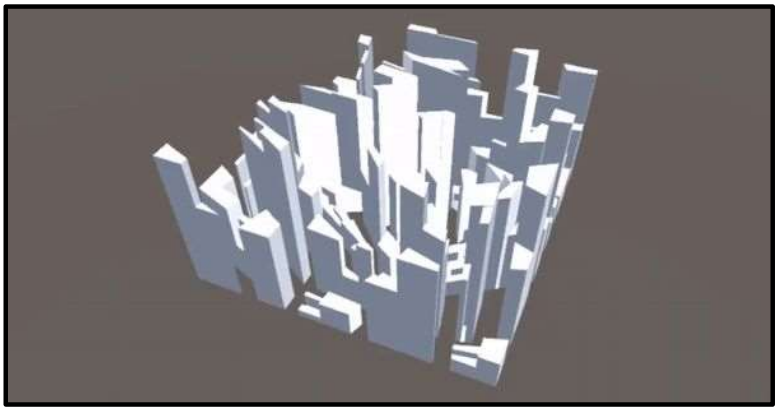






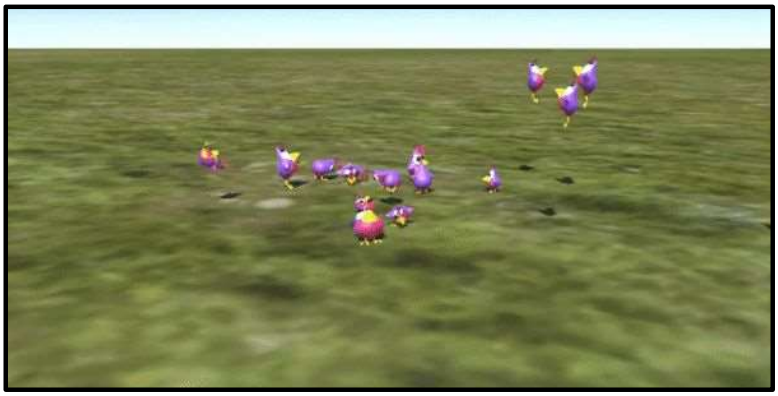


PROCEDURAL CITY (2018)



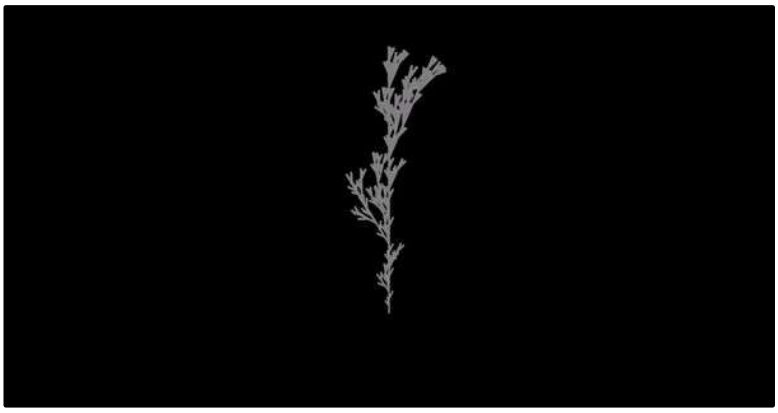
A procedurally generated city. The roadmap is built using a recursive subdivision function. The buildings are modeled using shape grammars. Implemented in Unity3D/C#.

CROWD SIMULATION (2018)



A crowd simulation using behavior trees. Implemented in Unity3D/C#.

3D L-SYSTEM TREE IMPLEMENTATION (2018)



L-System implementation with a 3D turtle graphics interpreter. Implemented in Processing.

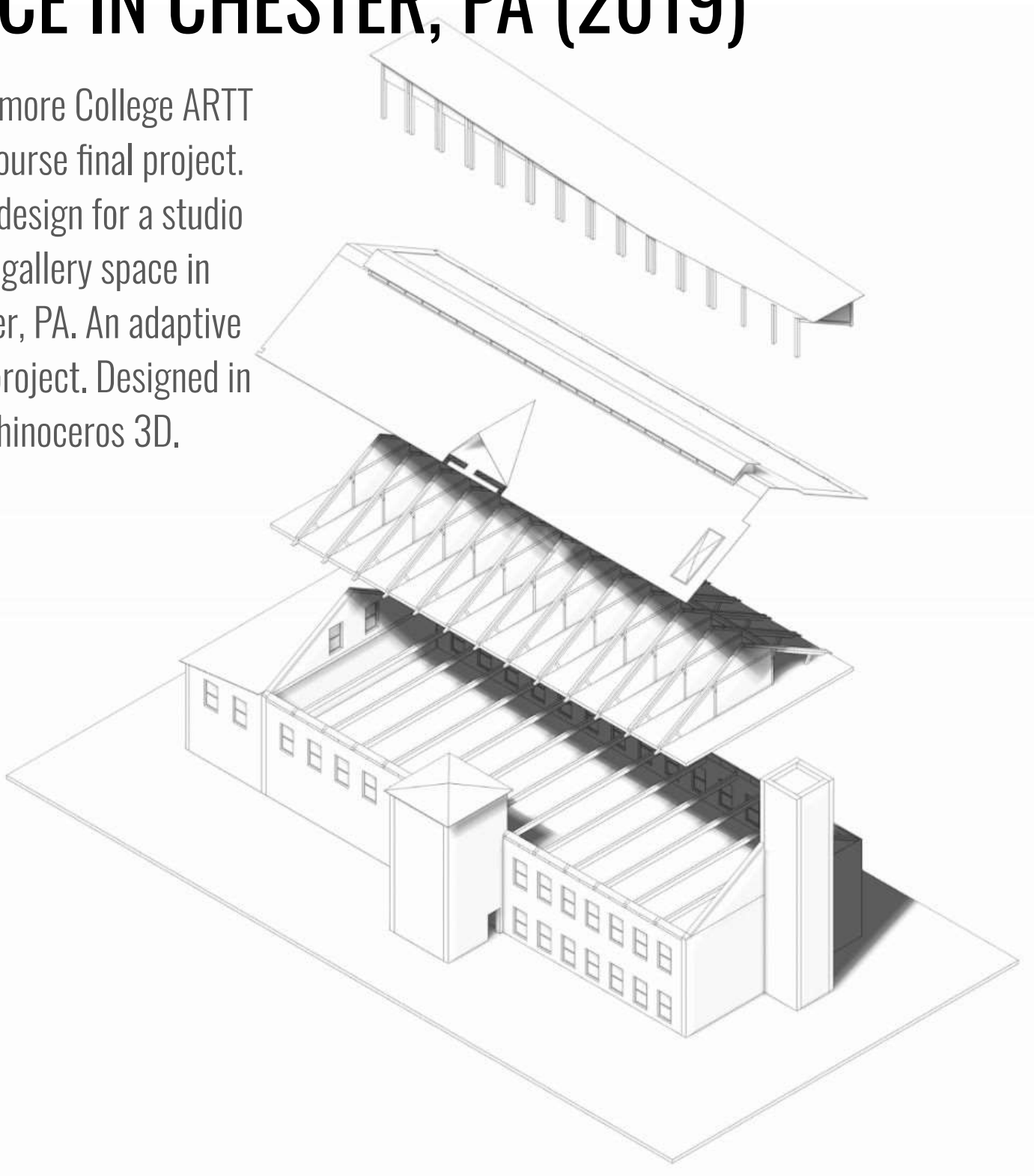
2D L-SYSTEM TREE IMPLEMENTATION (2018)

L-System implementation with a 2D turtle graphics interpreter. Implemented in Processing.

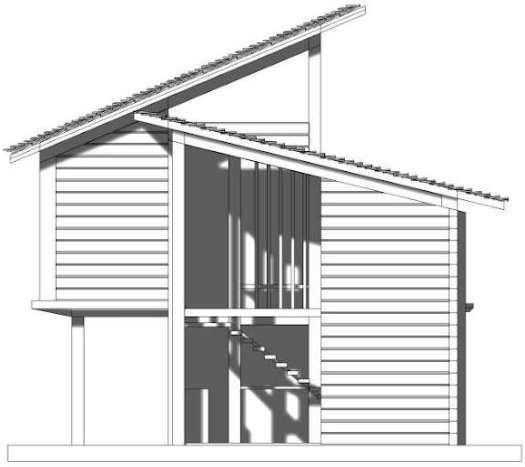
BUILDINGS, PAINTINGS, & DRAWINGS

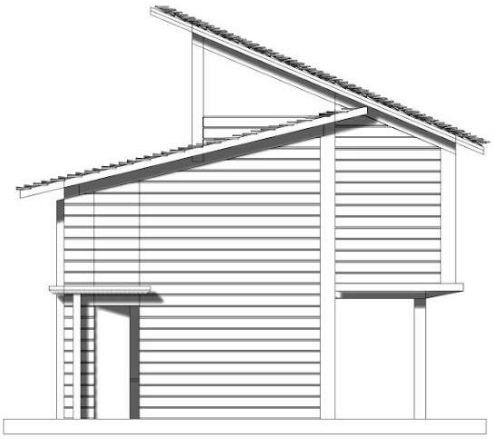
ART STUDIOS & GALLERY SPACE IN CHESTER, PA (2019)

Swarthmore College ARTT 062 course final project. Initial design for a studio and gallery space in Chester, PA. An adaptive reuse project. Designed in Rhinoceros 3D.



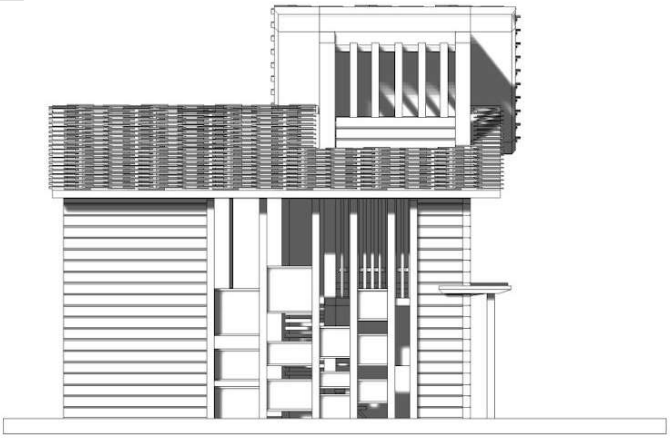
DREAM STUDIOS PROJECT (2019)

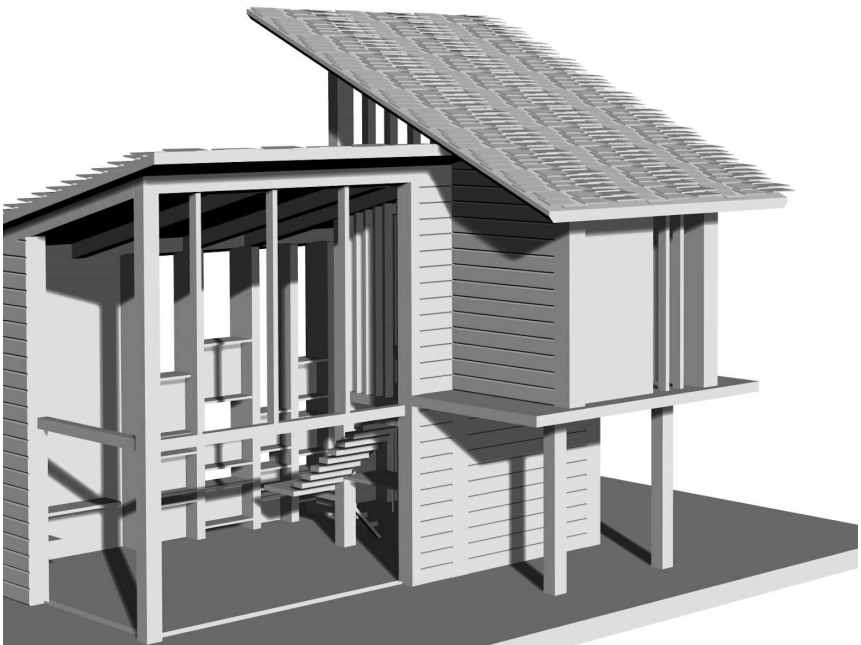


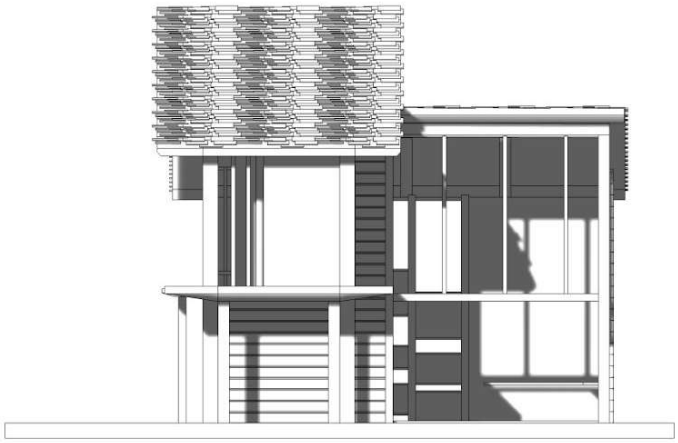


Swarthmore College ARTT 062 assignment.
Prompt: Design your dream studio.

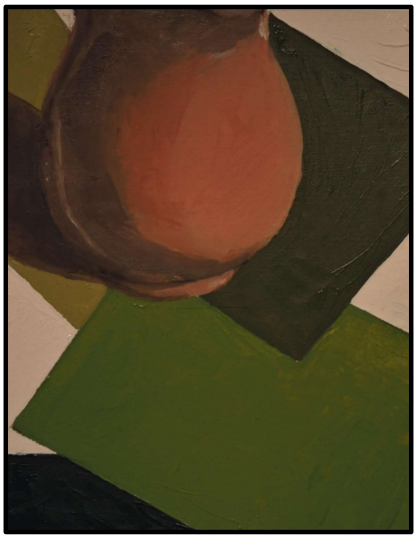
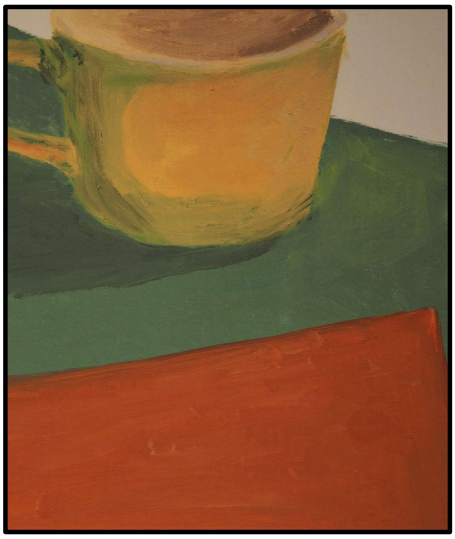
Designed in Rhinoceros 3D. Model 3D printed and assembled on laser engraved wood.

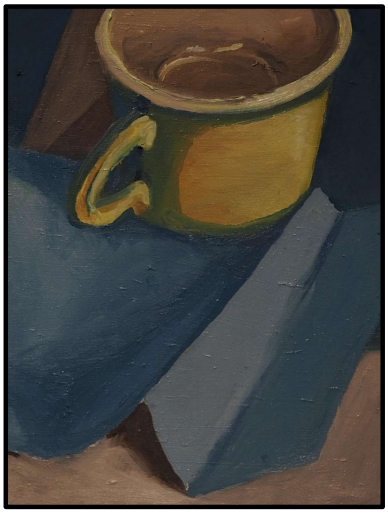


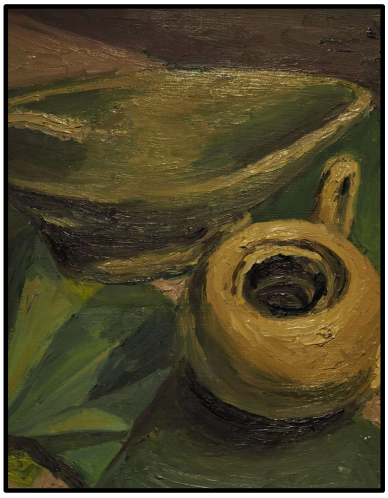
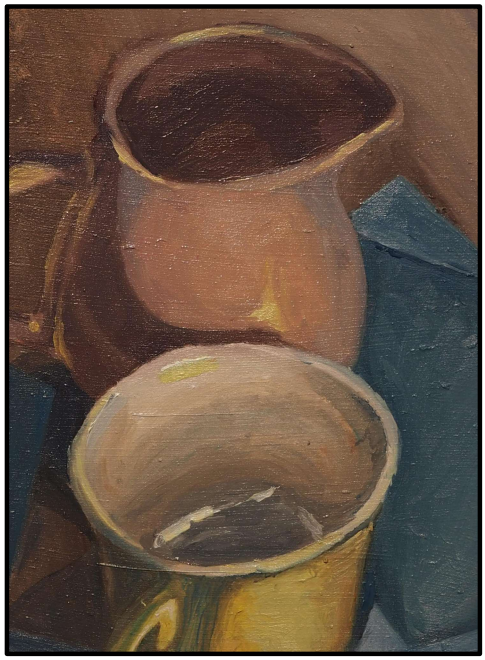


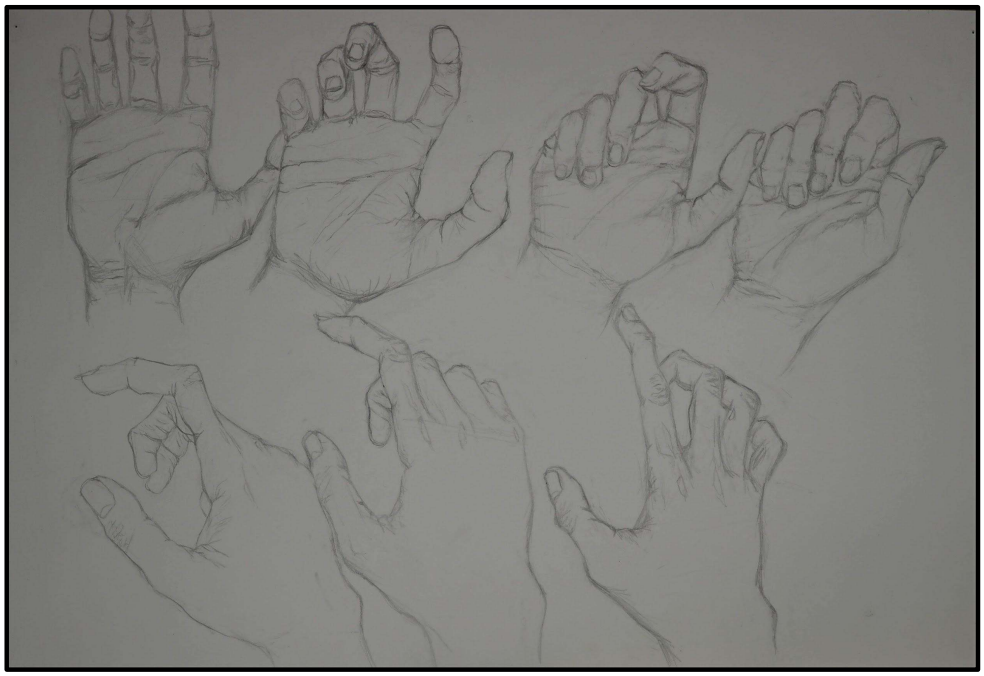


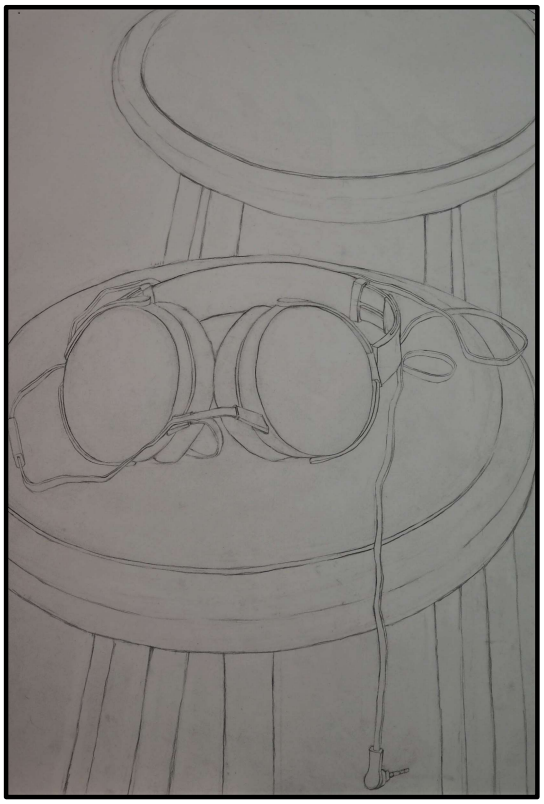
MISC. PAINTINGS (2018)





MISC. DRAWINGS (2018)