VR SCULPT

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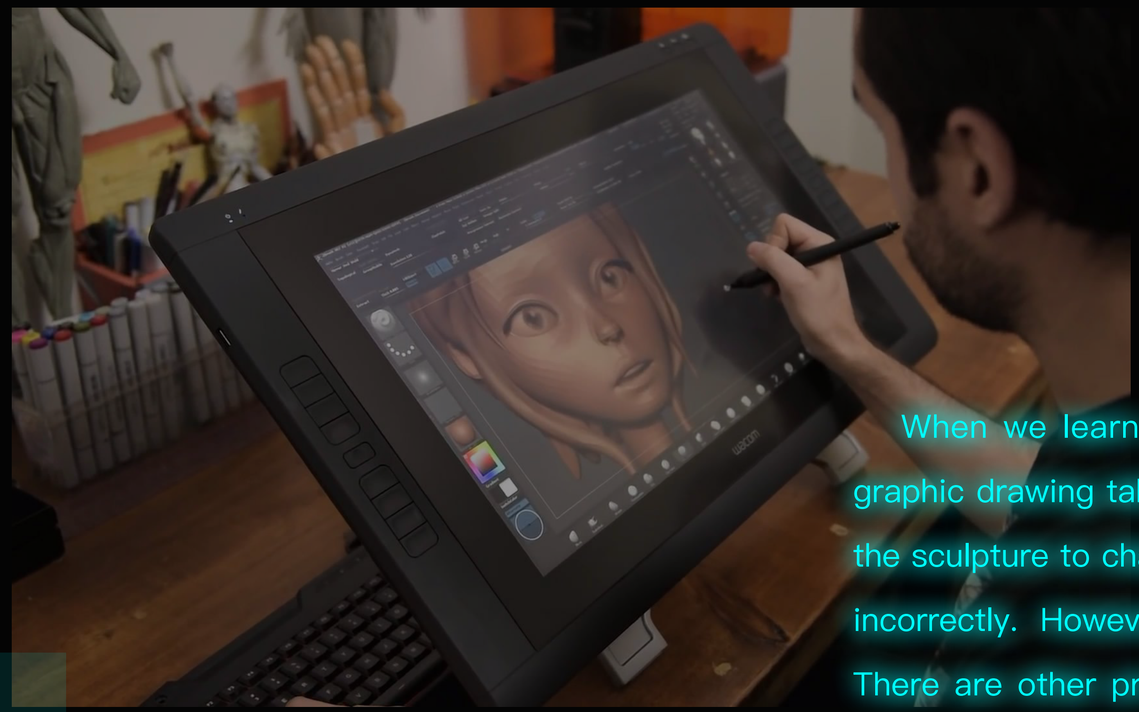

When we learn digital sculpture software, we learned how to use the graphic drawing tablet to sculpt the model. For example, we move and rotate the sculpture to change the perspective for checking whether or not to sculpt incorrectly. However, we still find we sculpt in the wrong location sometimes. There are other problems, such as complex UI elements that require much effort to remember the current state of use and the many features buried in the interface. Some students and professional digital sculptors tell us they spend a lot of time and energy adapting to this mode of operation.

How might we let user learns the digital sculpting software easily

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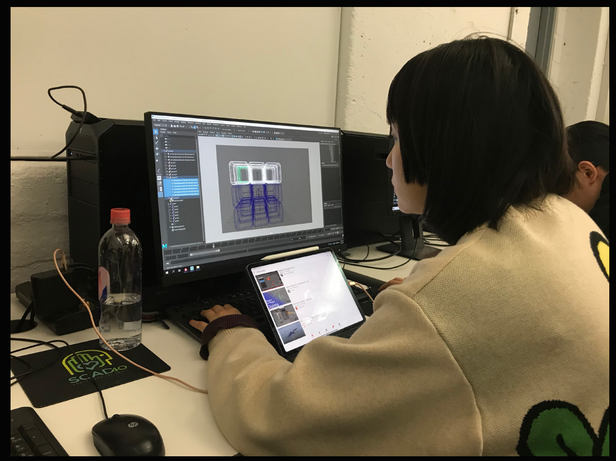
Primary Research
Observation



The problem of adaptive devices mainly involves human perception, observing, and interacting with objects in 3D space

2D Interaction

OPERATION

"Shortcuts of the same function in different software are not the same"

"Spend a lot of time studying"

"It doesn't fit the workflow"

DISPLAY

“Limited space, I can only hide other Windows, Sometimes I forget them”

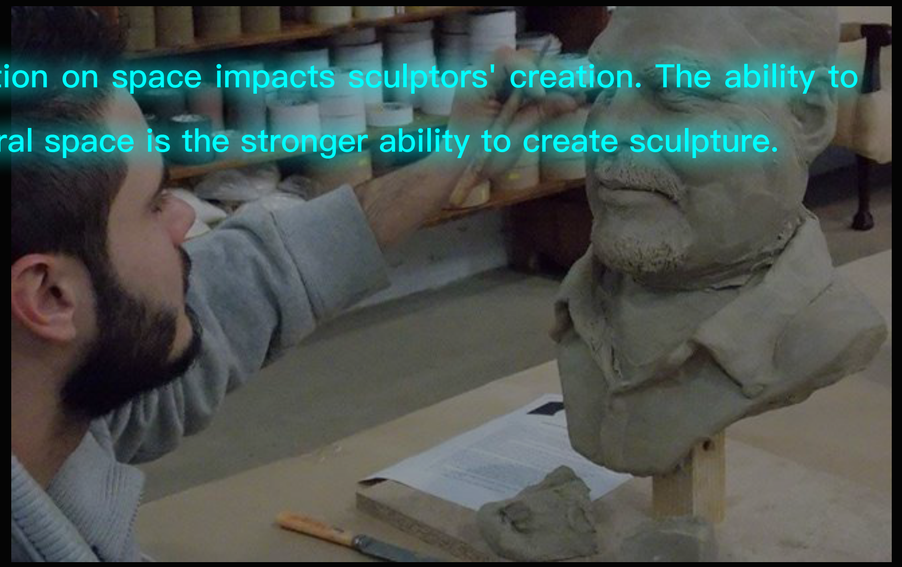
"Can't feel the depth"

Traditional Sculpting and Cognition

Adolf Hildebrand

"We must consider our general spatial ideas and the perception of spatial form as the most important facts in our conception of the reality of things"

The observation on space impacts sculptors' creation. The ability to feel the natural space is the stronger ability to create sculpture.



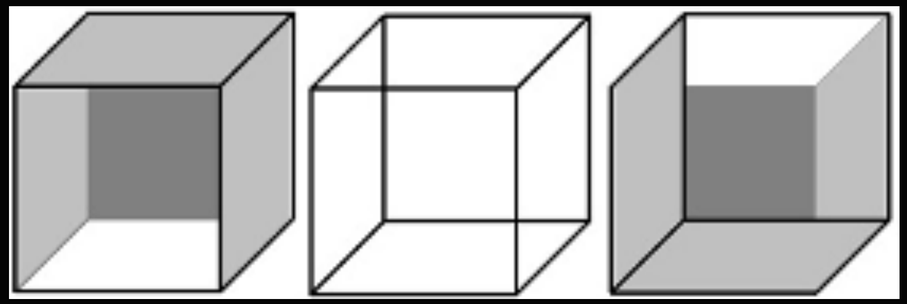
The construct of spatial ability

Jaison A. Manjaly

spatial ability includes first of all vision, that is the process of identifying and locating objects in the external world. In particular, vision refers to the perception of shapes, colors, metric distance, two-dimensional (2-D) patterns, three-dimensional (3-D) simple geometric forms, abstract pattern, line drawings, smooth surfaces, and so on.

- visualization
- speed rotation
- closure speed
- flexibility of closure
- perceptual speed

Visual Paradox

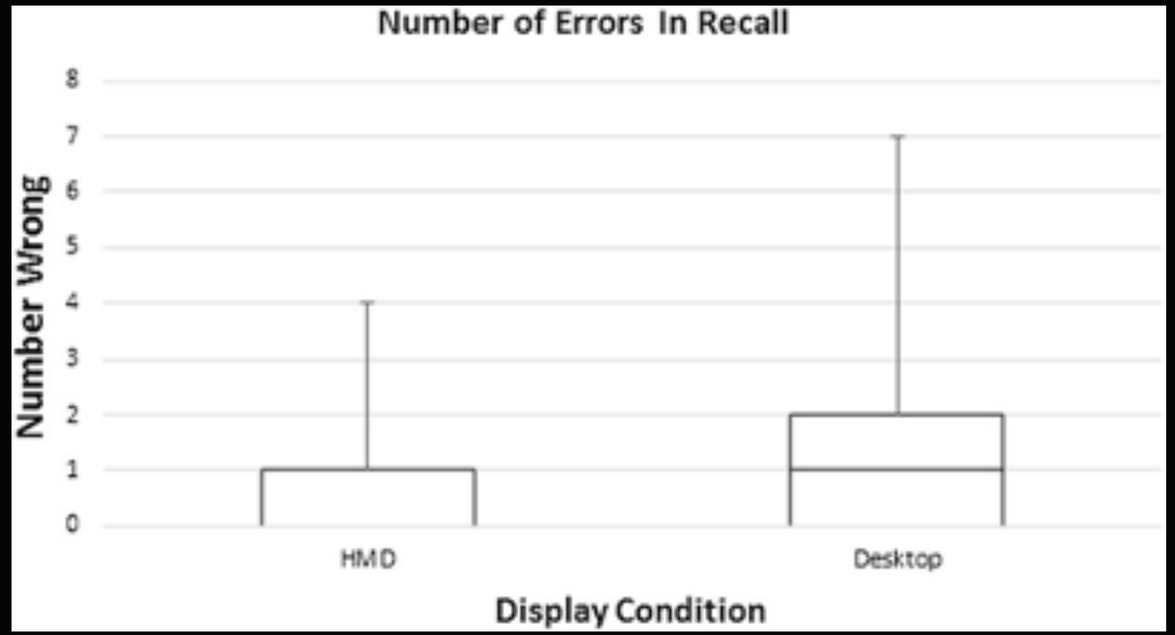


Necker Cub

Observation Research

VR

the immersive experience to make our perception more direct. The immersive experience is used to design better interactive method to display the information of the sculpture space. Through virtual reality (VR) to build an immersive experience,



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Competitive Analysis

ZBrush

Advantages

Simulate traditional sculpture. Unlike the traditional modeling method of point, line, and surface, users can create the model with a digital pen by freehand drawing board.

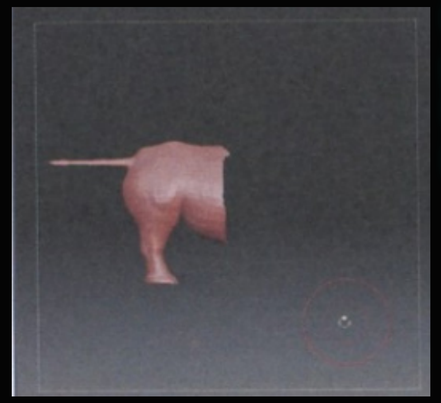
Users no longer spend time remembering the control points, lines, and surface functions in the model. Copy the interaction of painting and sculpture to construct complex models.

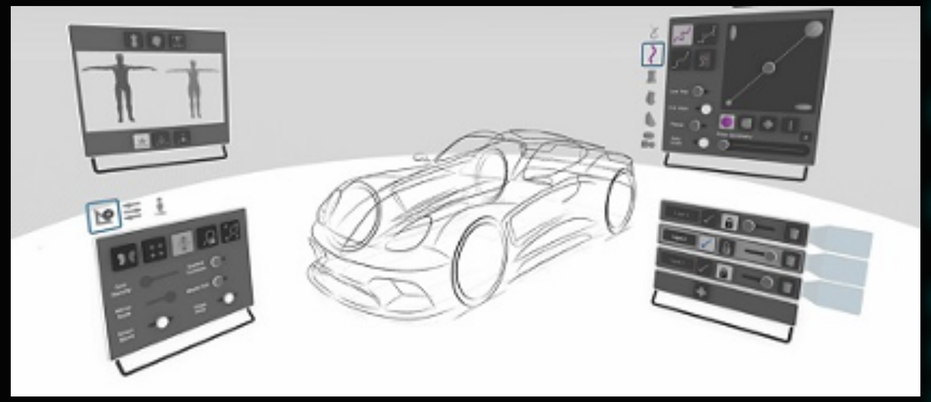
On the UI side, specify the brush–oriented modeling capabilities.

The brush function is consistent with the drawing software, which is easier to understand.

Disadvantages

UI Structure does not follow the sculptural process. The three main process: Changing and setting tools, Sculpting, and Checking. The changing tools and setting tools are not in one group. the changing tools is in the left side bar, but the setting tools is in the top bar. Users focus on the brush toolbar in the upper left corner and the sculpture area in the middle. On the right is the auxiliary function of 3D modeling.





VR Gravity Sketch

Advantages

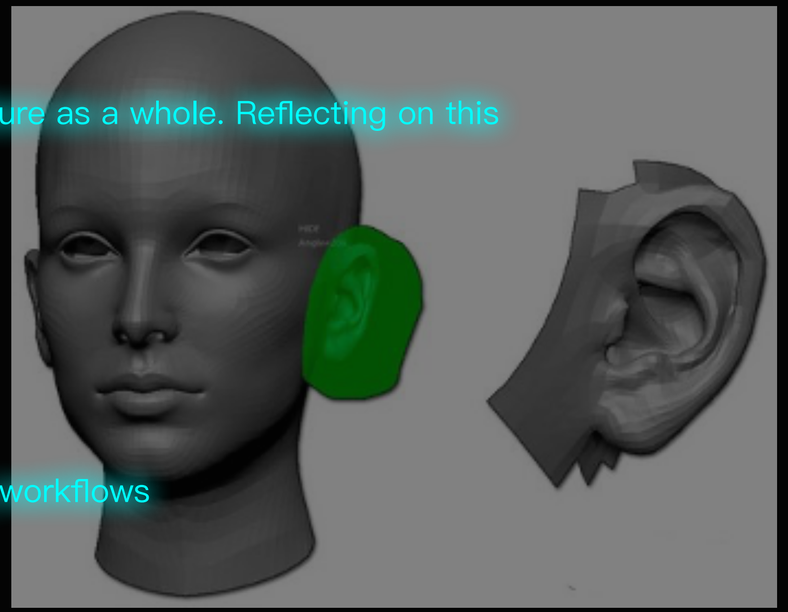
Design toolset built from the ground up with gestural interaction as the primary input method, providing an intuitive experience.

Disadvantages

There is no correlation between menus. It's easy to get confused because the window features are similar. The modeling approach refers to the industrial meeting software that does not use an interactive environment with VR. For example, modeling mainly focuses on points, lines, and faces, so corresponding menus are needed to set. With the increasing complexity of the model, more and more Windows will be needed. This adds to the user's memory stress. because of the chaotic workflow. Without the search function and the Picture Viewer, users cannot view and search for references. Without a three-view window, the user cannot calibrate the model: no music player, no relaxation during long hours of work. Confusion in interface navigation often leaves users unable to find functionality.

Details & Entirety

the sculptor needs to control the relationship between the sculpture details and the sculpture as a whole. Reflecting on this relationship in real-time can reduce the number of mistakes users make while sculpting.



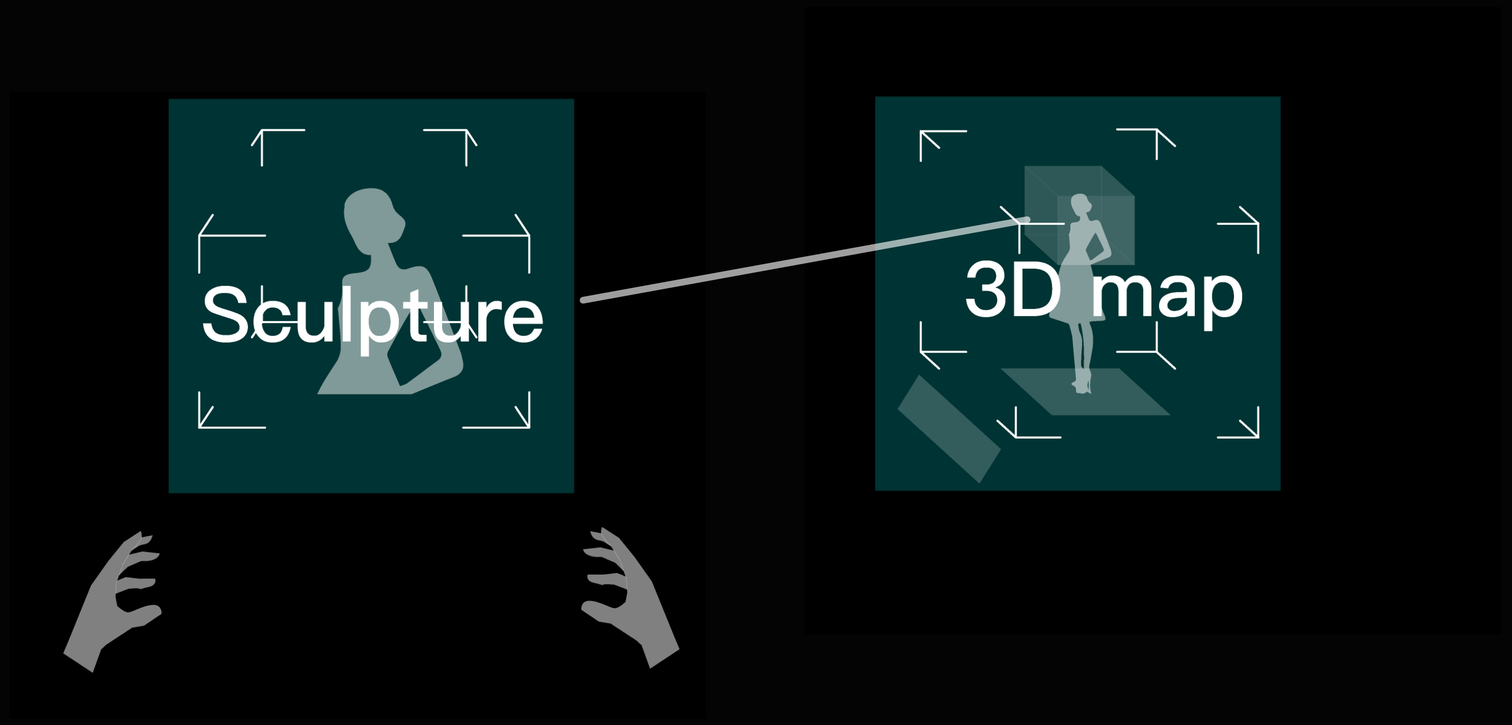
Workflow

Compliance with traditional sculpture and digital modeling workflows

Spaital Feeling

More natural

Details & Entirety



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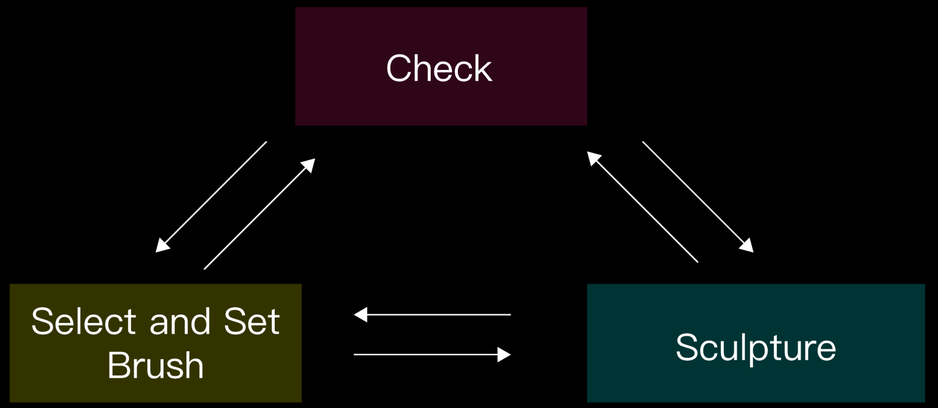
Ideation



Work Follow

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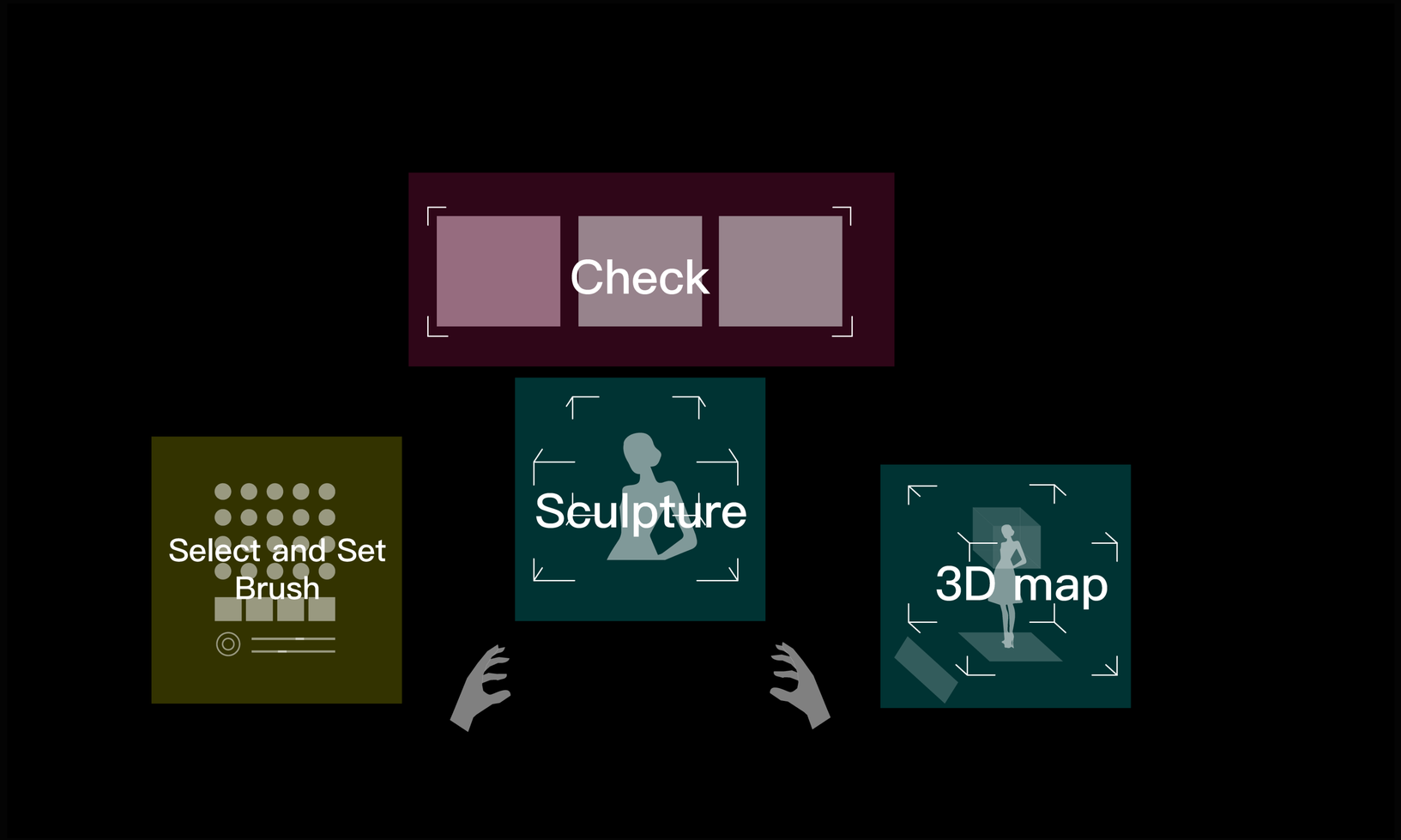
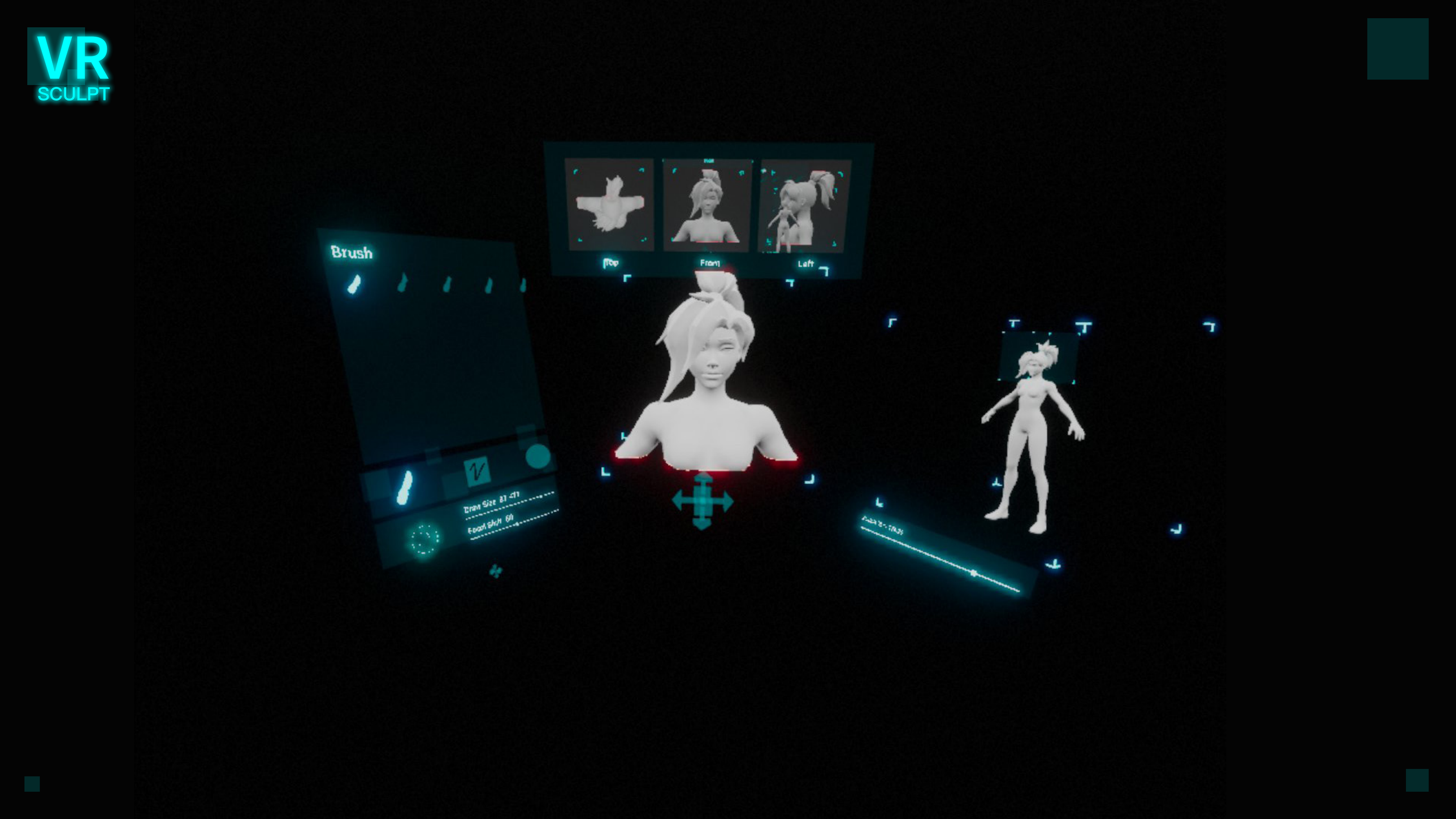
Ideation




VR
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Brush
Top
Front
Left