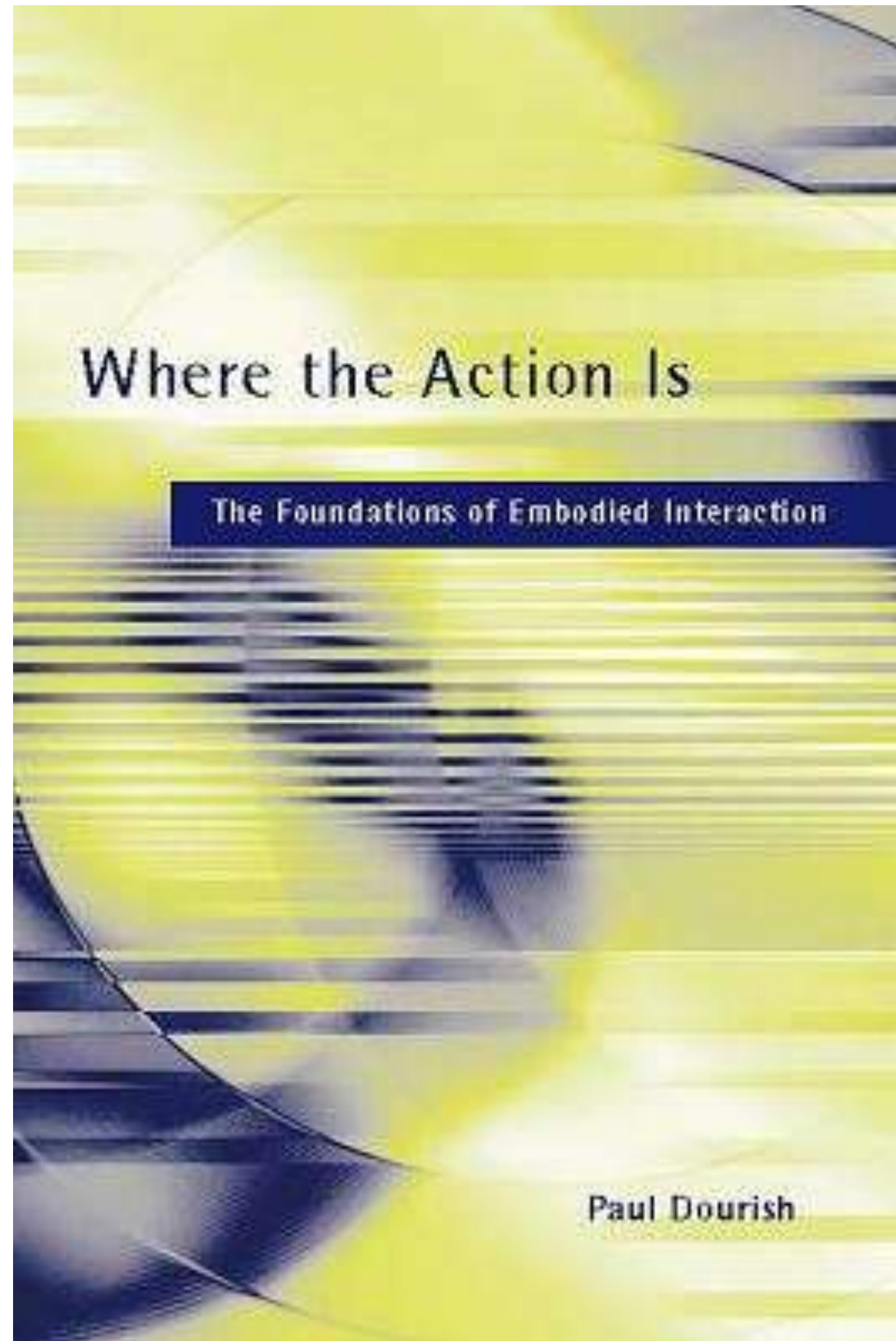


Reference

Where the Action Is: The Foundations of Embodied Interaction — — Paul Dourish



Introduction:

In *Where the Action Is*, Paul Dourish explores the philosophical foundations of human–computer interaction. He argues that computer science is not only an engineering practice, but also a way of constructing models of reality and action.

He introduces the concept of embodied interaction, emphasizing that interaction between people and systems is a skilled, participatory practice rather than a detached, rational operation.

Drawing on phenomenology, he suggests that in everyday life, practical engagement comes before abstract thinking. He also discusses how this perspective reshapes our understanding of interactive systems and influences future design.

My thought:

Dourish’s idea of embodied interaction made me think that if dragging is not performed because we fully understand the rules. Instead, it is learned through repeated practice within the action space defined by hardware.

This perspective provides theoretical support for my exploration of how hardware influences and shapes human behaviour.

「enquiry shift」

Week3— —1.29

[Enquiry] Within the digital context of the computer desktop, how do users, through a limited set of gestures and commands, execute and adopt interface rules that do not fully correspond to real-world experience but remain operational within digital systems? How do these rules come to appear natural and unremarkable through repeated use?



Week4— —2.5 「hardware: trackpad」

[Enquiry] When users perform the same action (dragging a file into the trash) on different devices, how does hardware design influence body posture, hand movement, and movement path, and therefore shape user behaviour?

— How do fingers physically interact with these interface spaces?

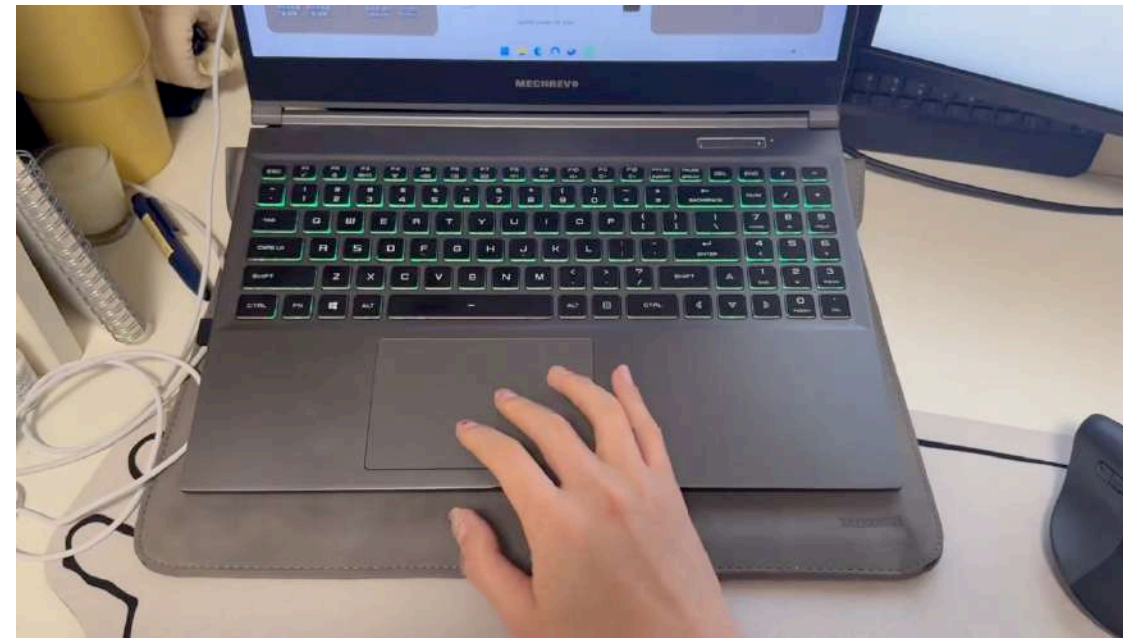
[Intention] To transform everyday operations into visible and reflective structures of action, and to consider whether the ways we operate in daily computer environments are shaped by hardware and interface design.

Experiment — week4

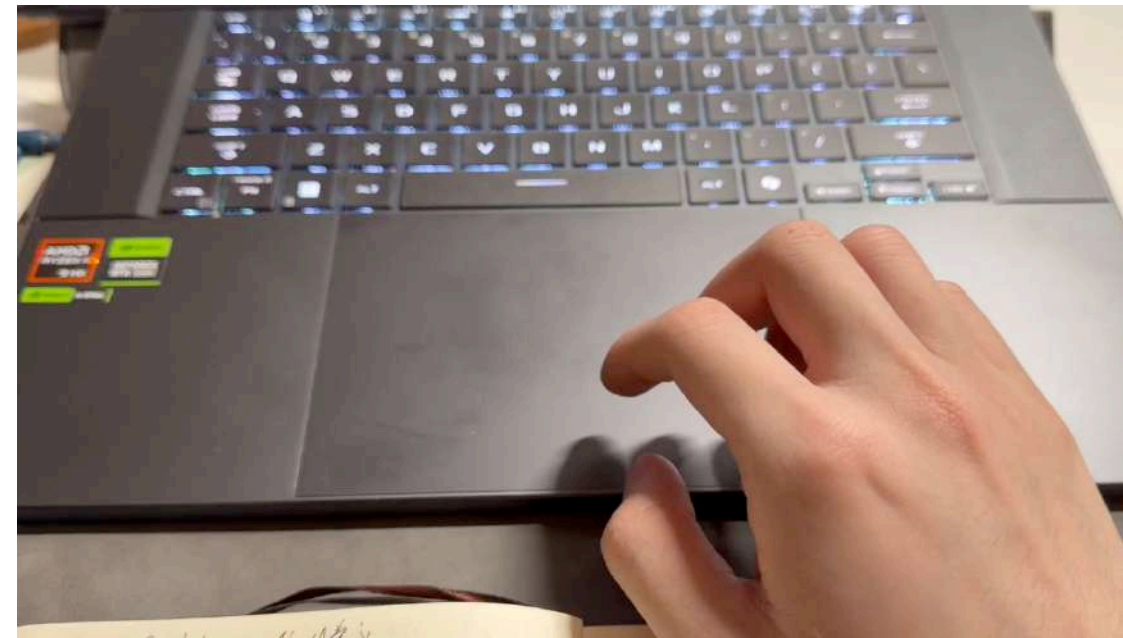
I asked different friends to perform the same action on their own computers, using their usual way of operating:

「Action: Move a file from the top-left corner of the desktop to the trash bin (located at the bottom right of the desktop).」

And recorded their hand movements while they were performing this action.



Windows
Z2 AIR 15.6”



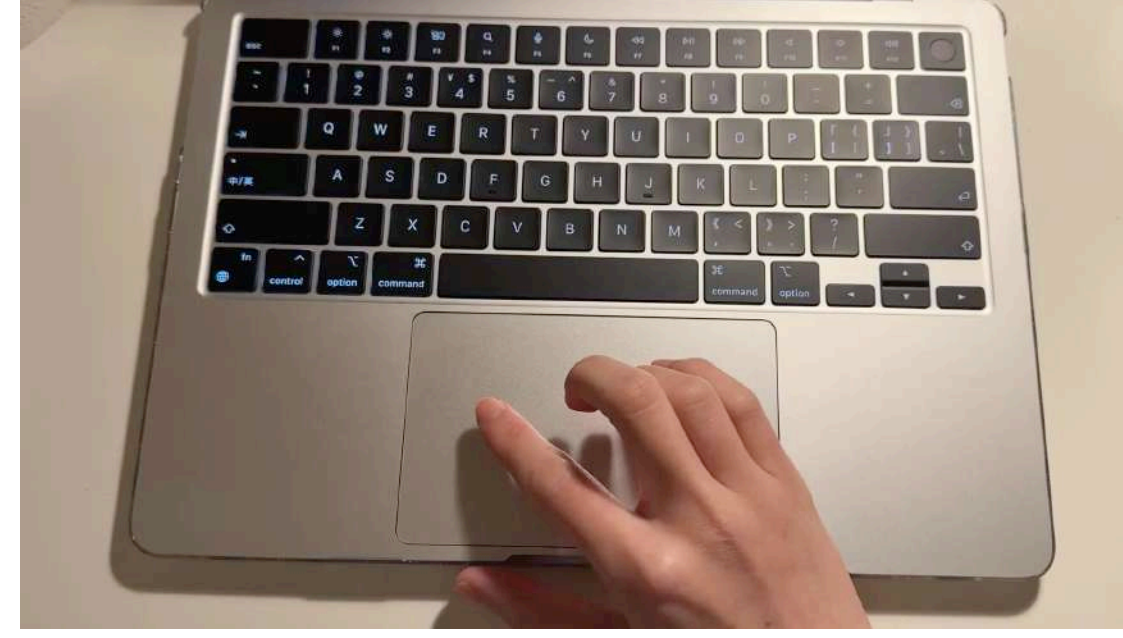
Windows
ROG 16”



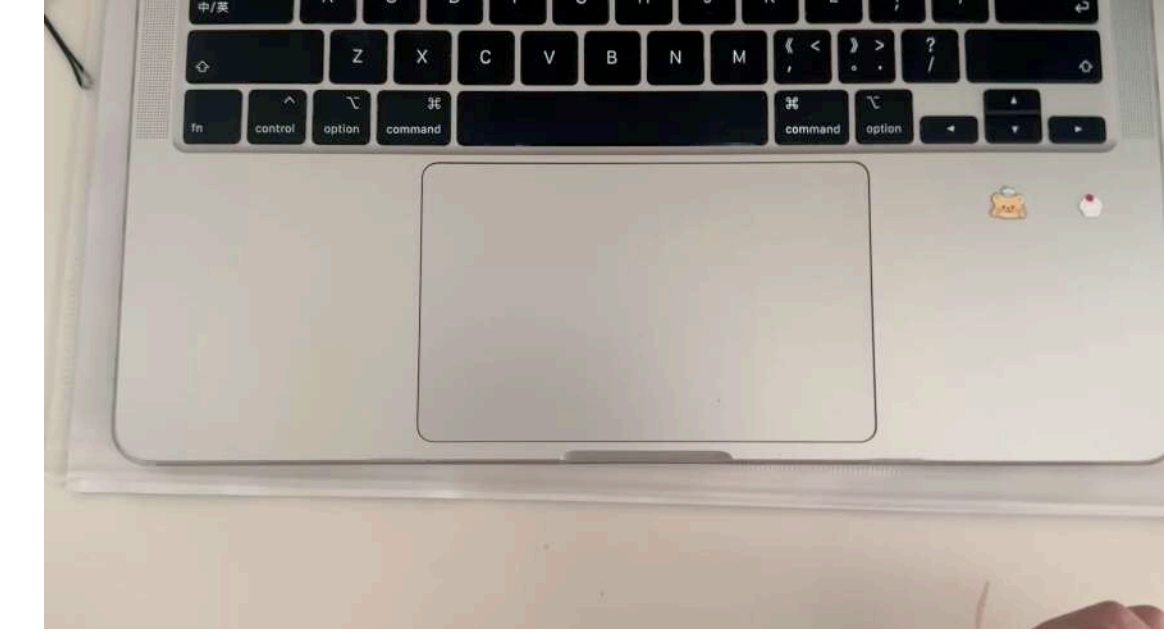
Windows
Lenovo Air 14”



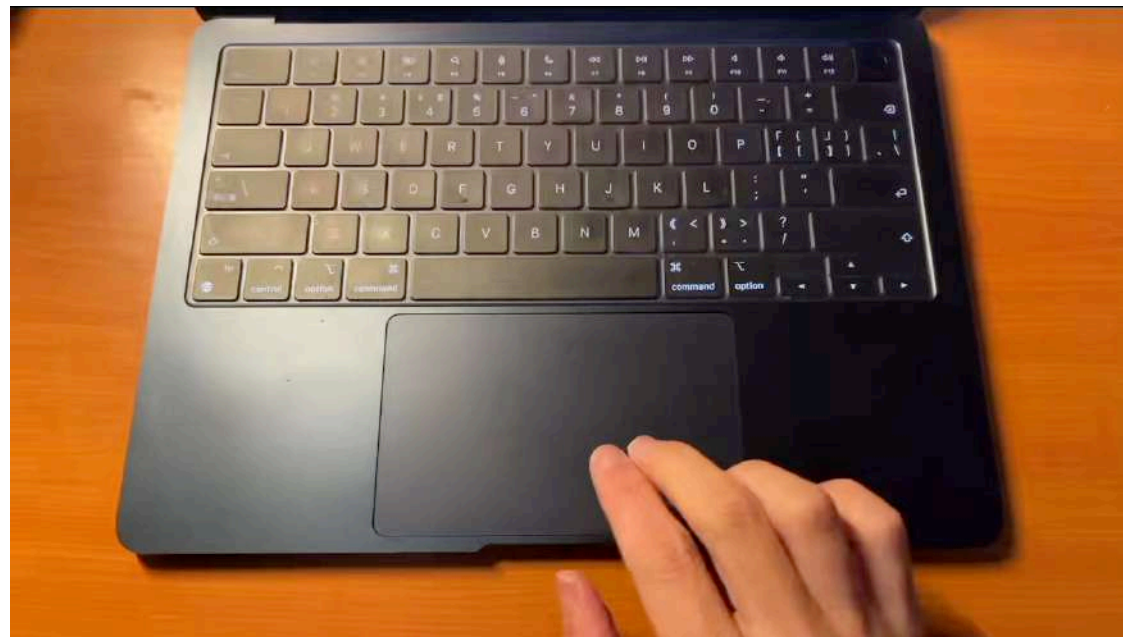
macOS
Macbook Air 13”



macOS
Macbook Air 13”



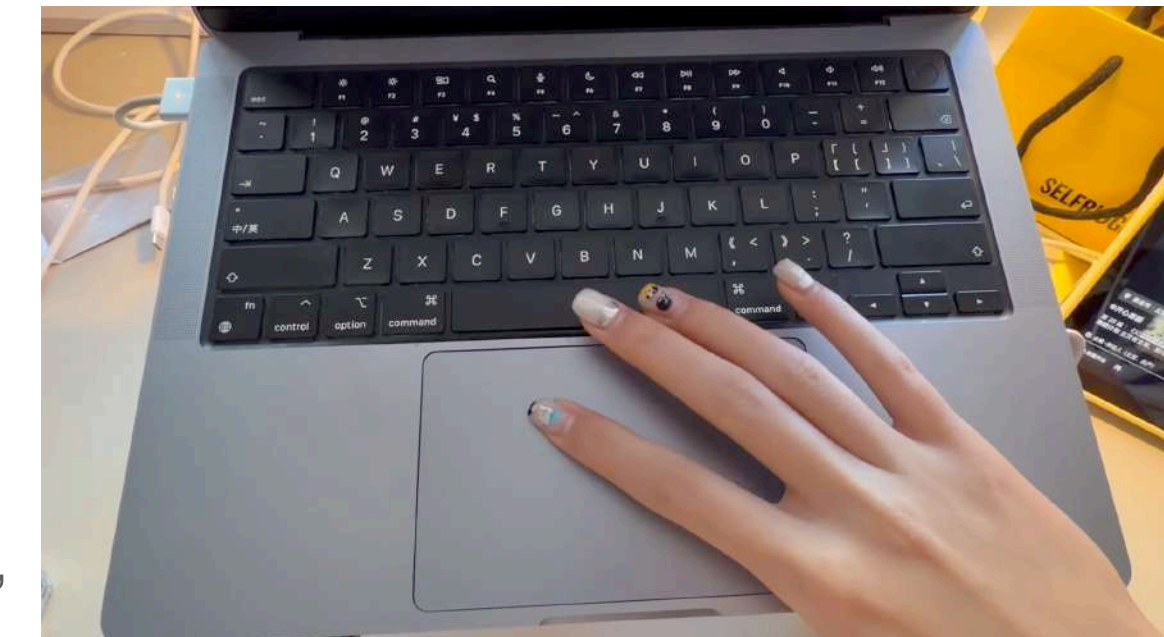
macOS
Macbook Pro 13”



macOS
Macbook Air 13”



macOS
Macbook Air 13”

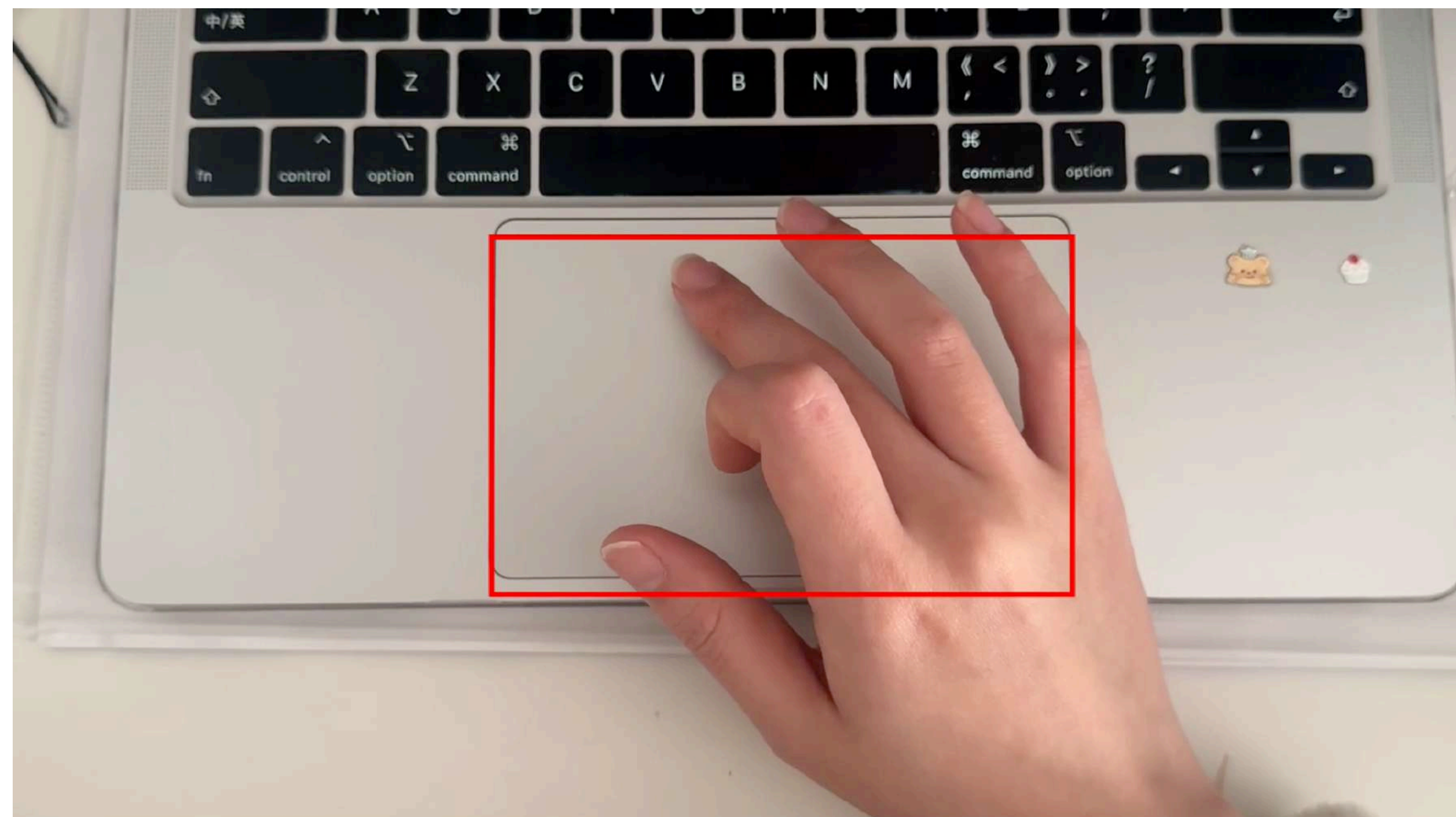
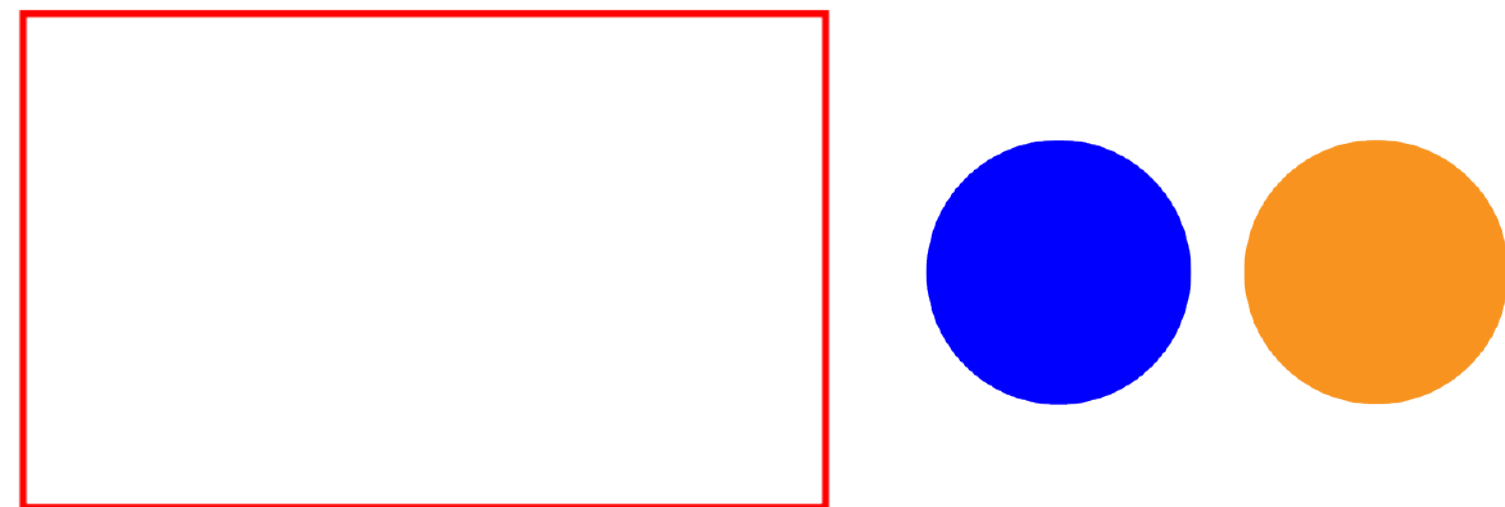
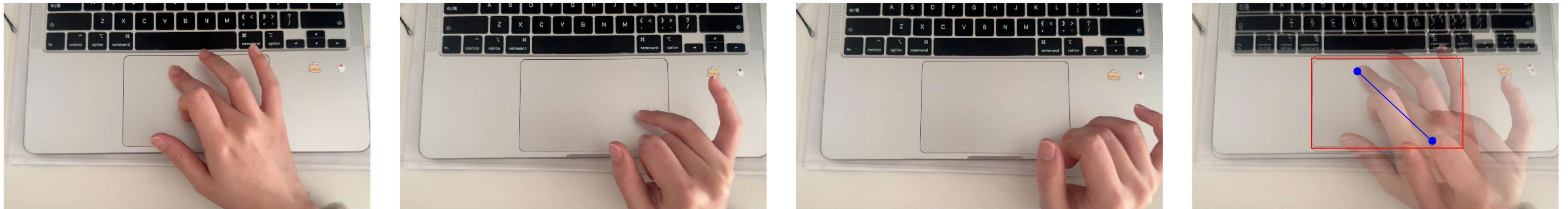


macOS
Macbook Pro 14”

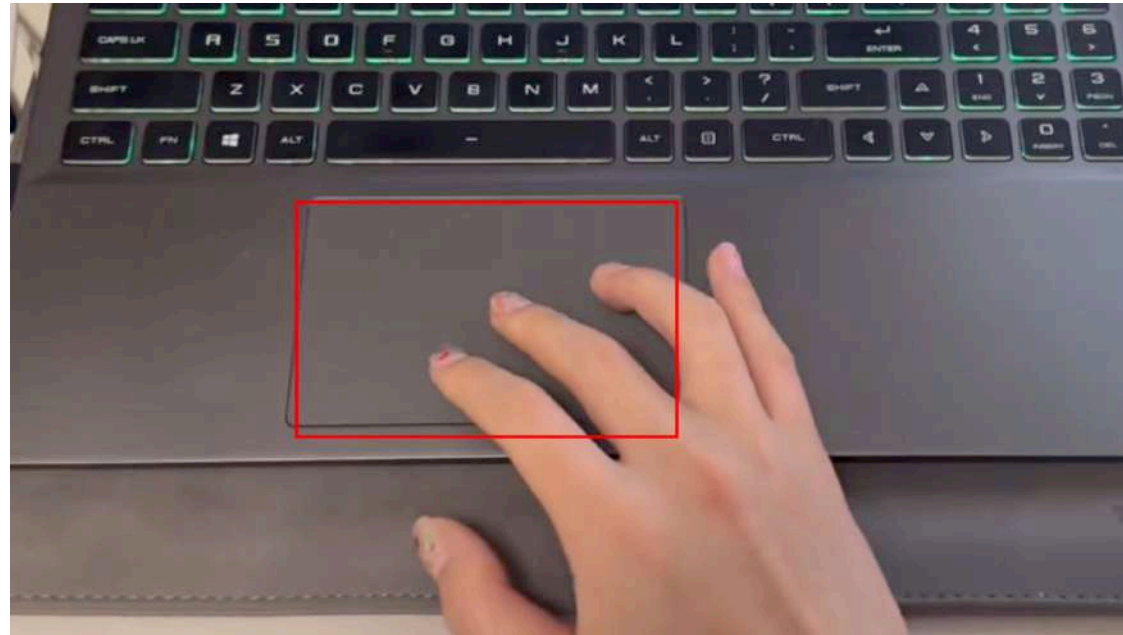
Experiment — week4

Translating: I translated these videos using dots and rectangular frames in order to capture the hand movements.

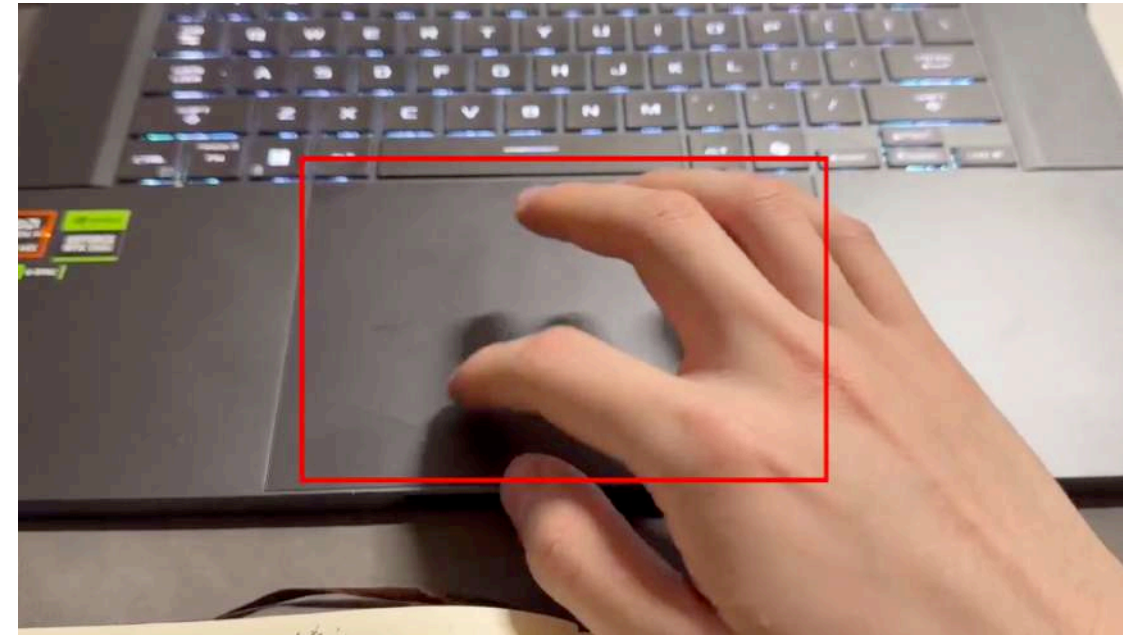
After analyzing the videos, I found that most people use their index finger and middle finger to operate. I used a yellow dot to trace the position of the index finger, a blue dot to trace the middle finger, and a rectangular frame to represent the trackpad.



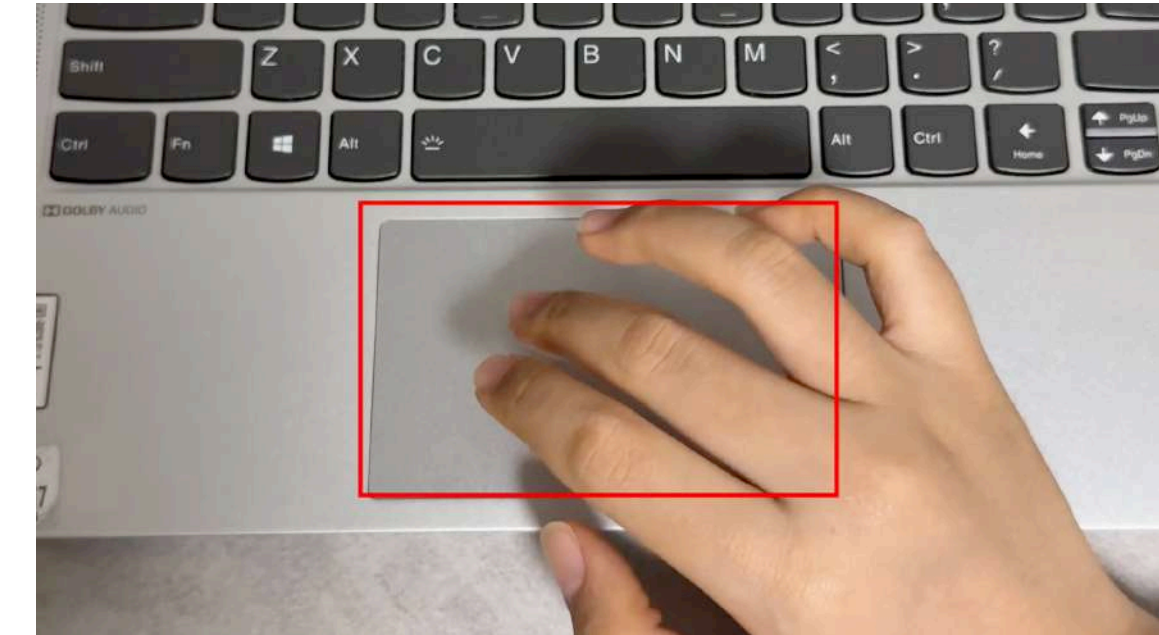
Experiment — week4



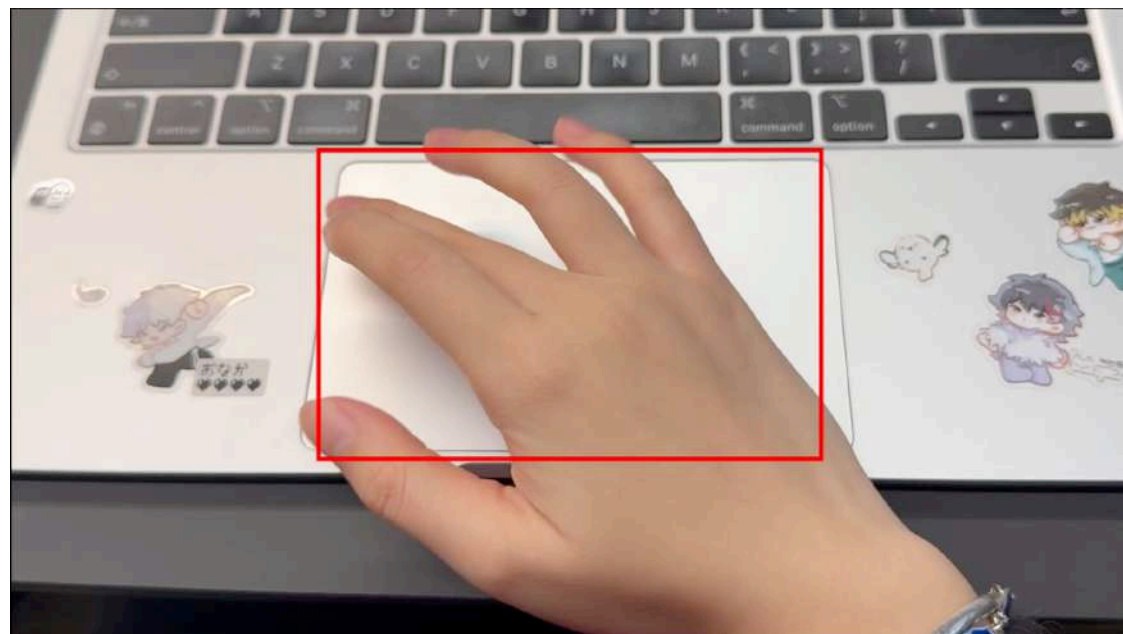
Windows
Z2 AIR 15.6"



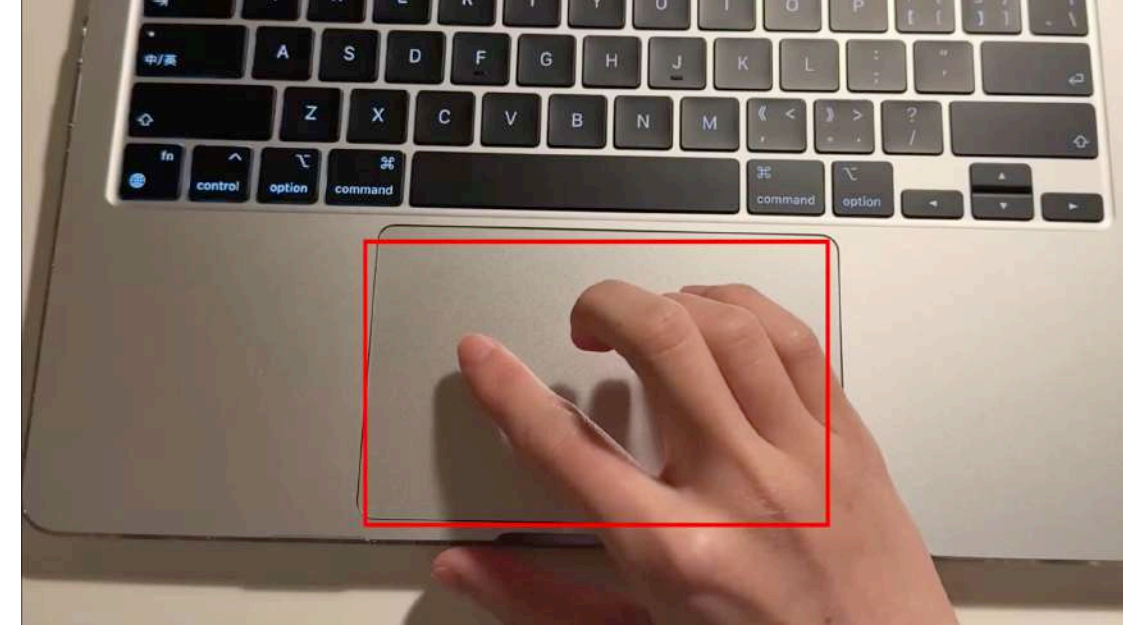
Windows
ROG 16"



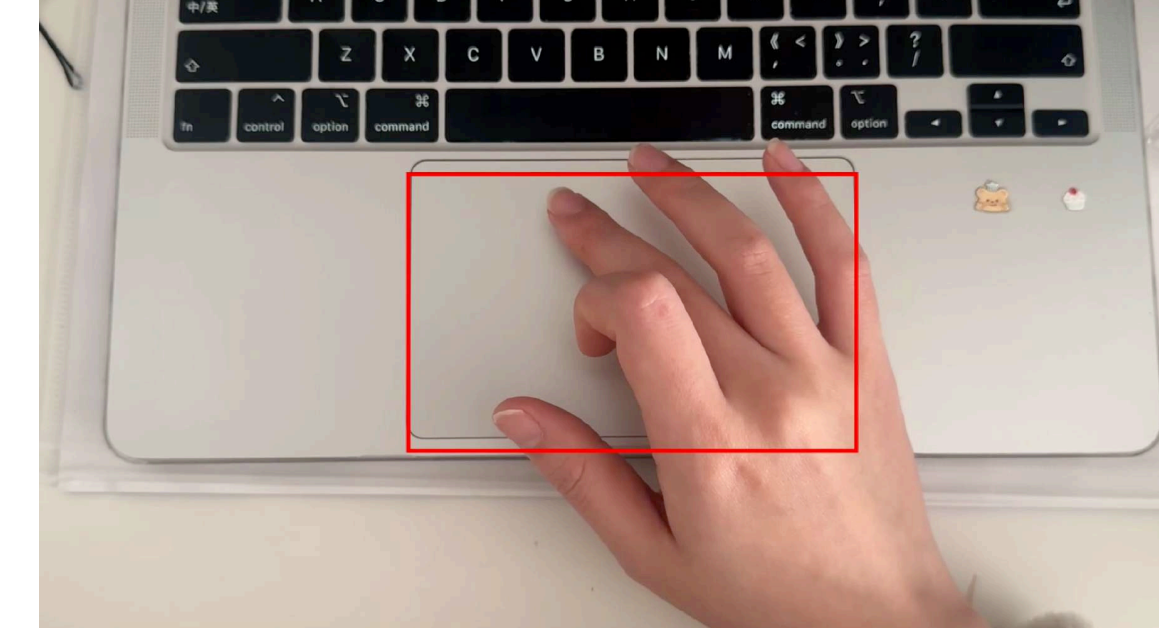
Windows
Lenovo Air 14"



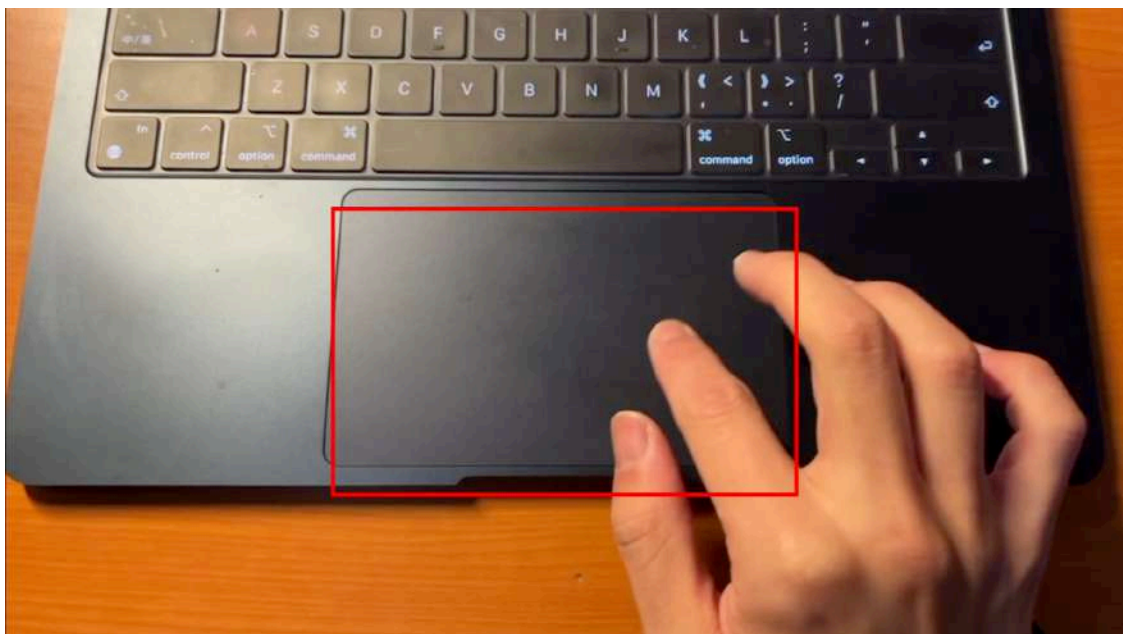
macOS
Macbook Air 13"



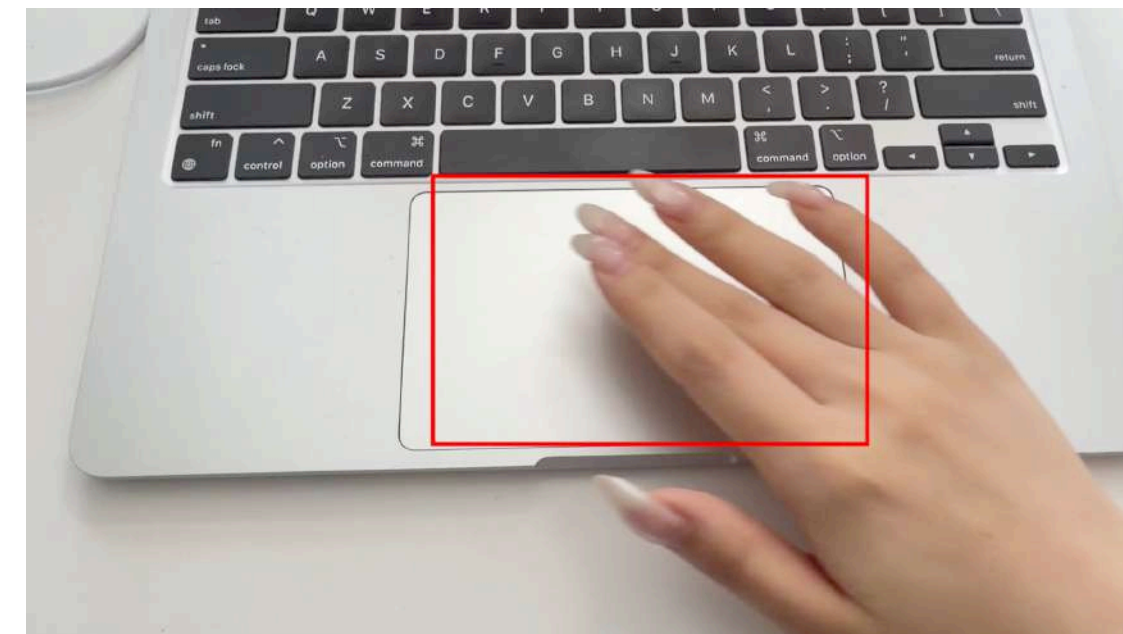
macOS
Macbook Air 13"



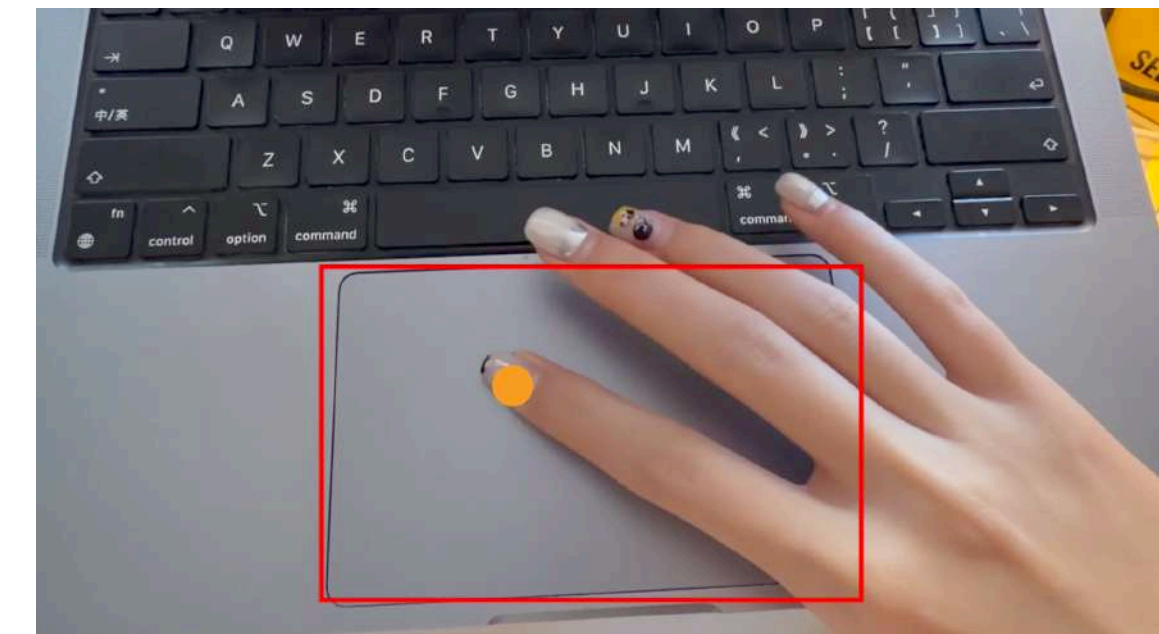
macOS
Macbook Pro 13"



macOS
Macbook Air 13"

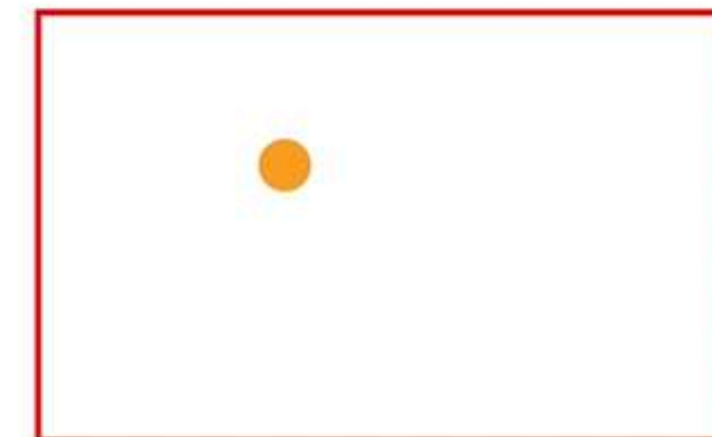


macOS
Macbook Air 13"



macOS
Macbook Pro 14"

Experiment — week4



Experiment — — week4

Comparative Analysis — Same Brands and Model

Macbook Air 13"



Experiment — — week4

Comparative Analysis — Different Brands and Model



Windows
Z2 AIR 15.6"



macOS
Macbook Air 13"



Windows
ROG 16"



Windows
Lenovo Air 14"

Experiment — — week4 → week5

Reflection: Our ways of operating are not only personal habits, but are also influenced by hardware design.

New focus: At first, I wanted to explore how we follow the rules set by interface and hardware design when we use computers. However, during the experiment, I realized that even when people use exactly the same device, their operating methods are different. (For example, some use one finger, while others use two.) But these actions still happen within the influence and limits of the hardware design.

Week5 — —2.19 「Differences Within Hardware Influence and Constraints」

[Enquiry] How does hardware (trackpad) design shape bodily movement when performing the same desktop action, and how are individual differences contained within this structure?

Experiment — — week5

[intention & thought]

To explore how our fingers physically interact with interface spaces during everyday digital operations, and to make this “action space” visible.

Do everyday digital actions take place within a structure defined by hardware?

Does hardware influence how actions happen?

[position]

I see desktop operations as a learned operational language, acquired through repeated bodily practice.

Hardware does not determine the exact form of an action, but it defines: the scale of movement; the range of movable space; the boundaries of finger motion. Interaction is neither completely free nor completely determined.

[audience]

This project is aimed at users who are familiar with and regularly use desktop digital environments.

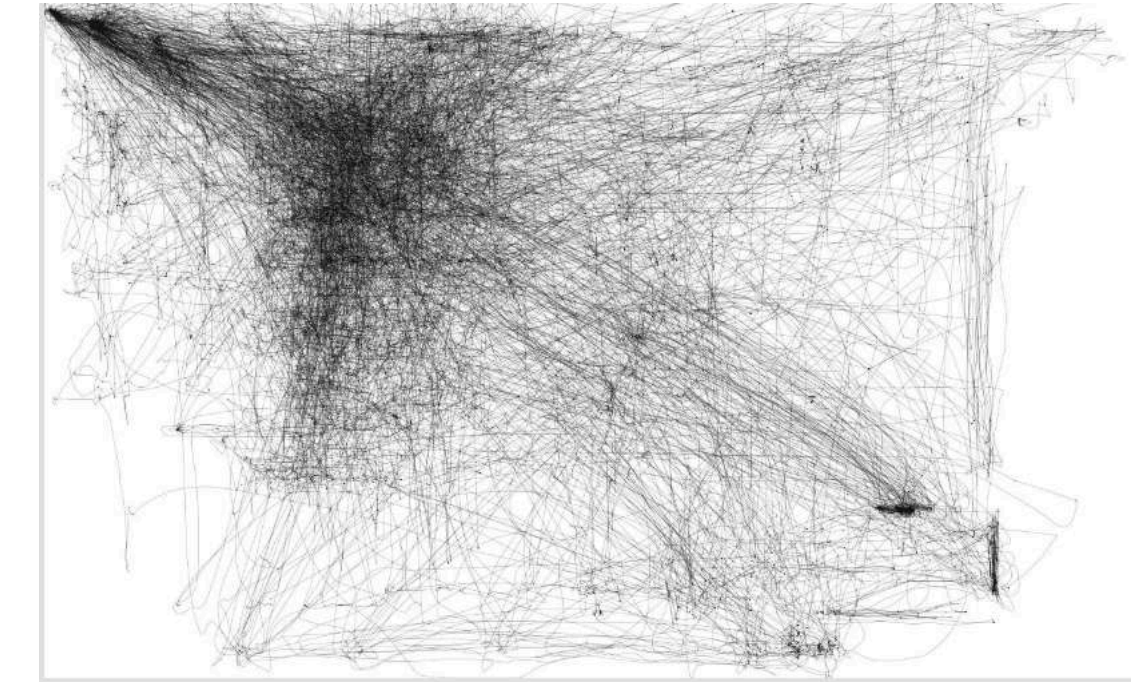
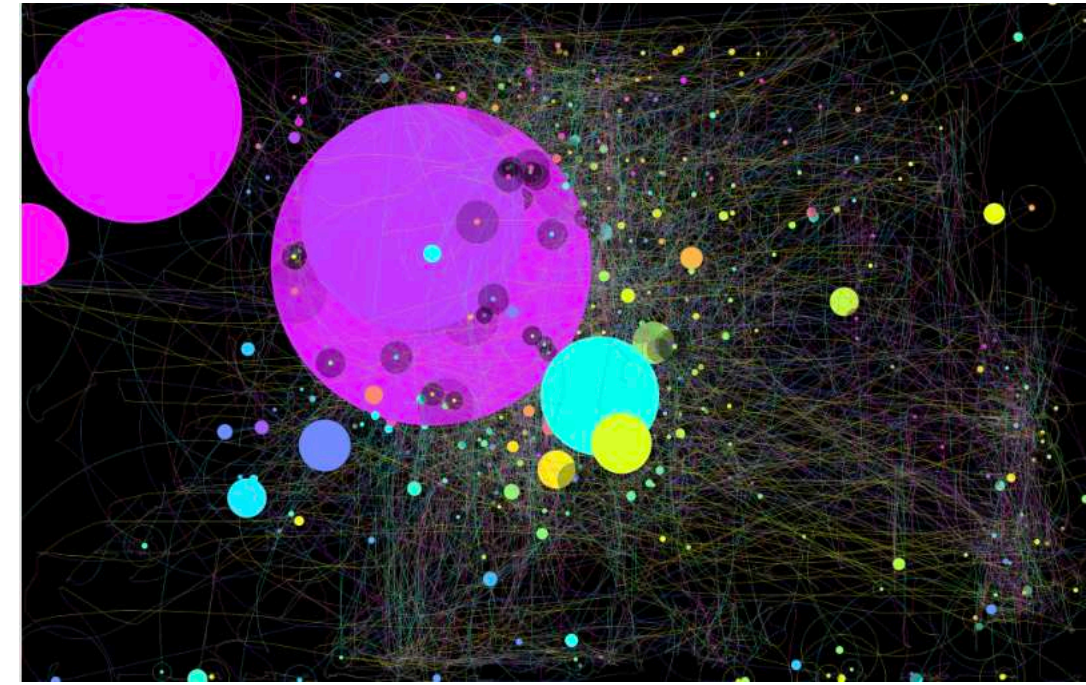
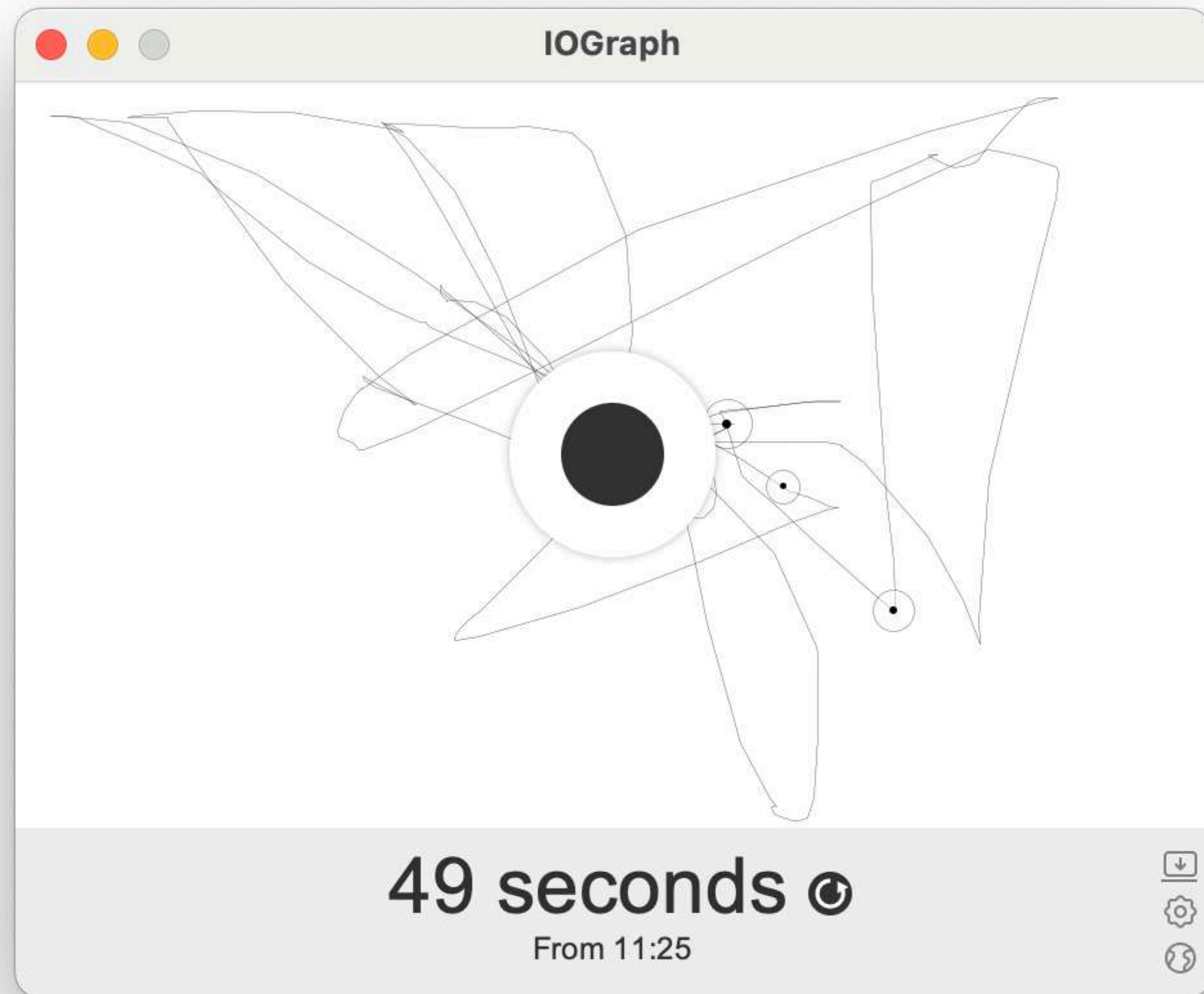
It invites them to **reconsider the relationship between their bodily habits and hardware structure.**

[methods & media]

An interactive website format, allowing viewers to switch between different individuals and devices, and to view layered traces for comparison.

Reference 「action → trace」

IOGraphica — — Murat Naci Çoklu



Introduction:

IOGraphica is a program that turns everyday mouse movements into visual images.

While the user is doing normal computer tasks, the program runs in the background. After that, it can export an image generated from the path of the mouse movements.

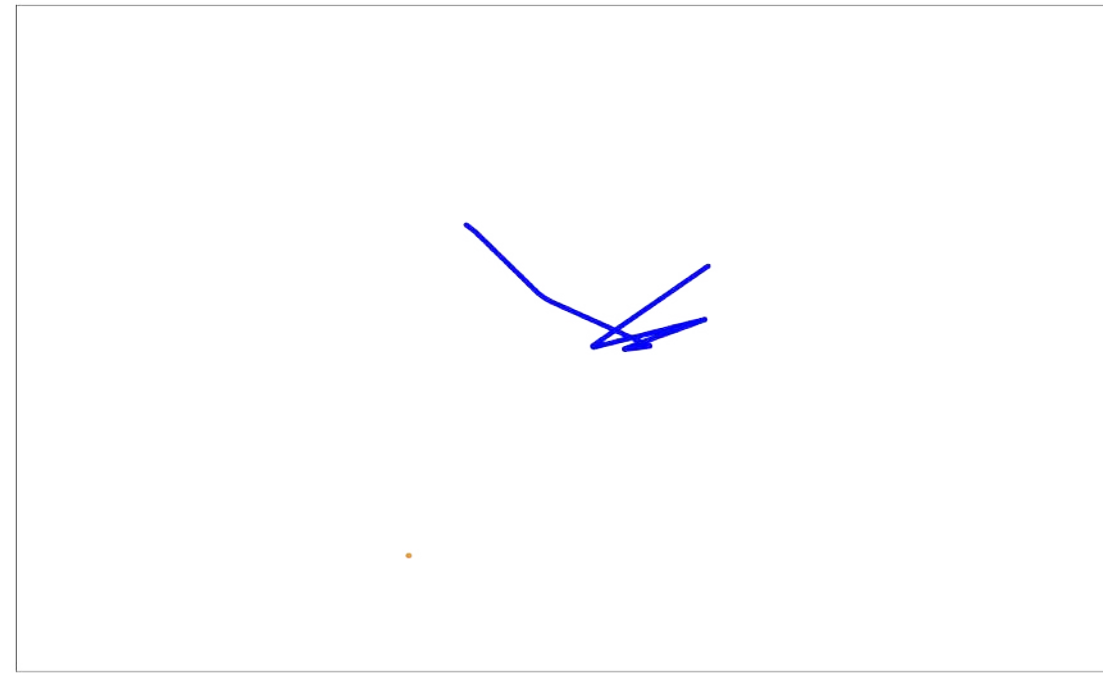
My thought:

IOGraphica inspired me to use lines to trace and show operational movements. It made me realize that even without specific interface content, movement lines themselves can become the main visual subject.

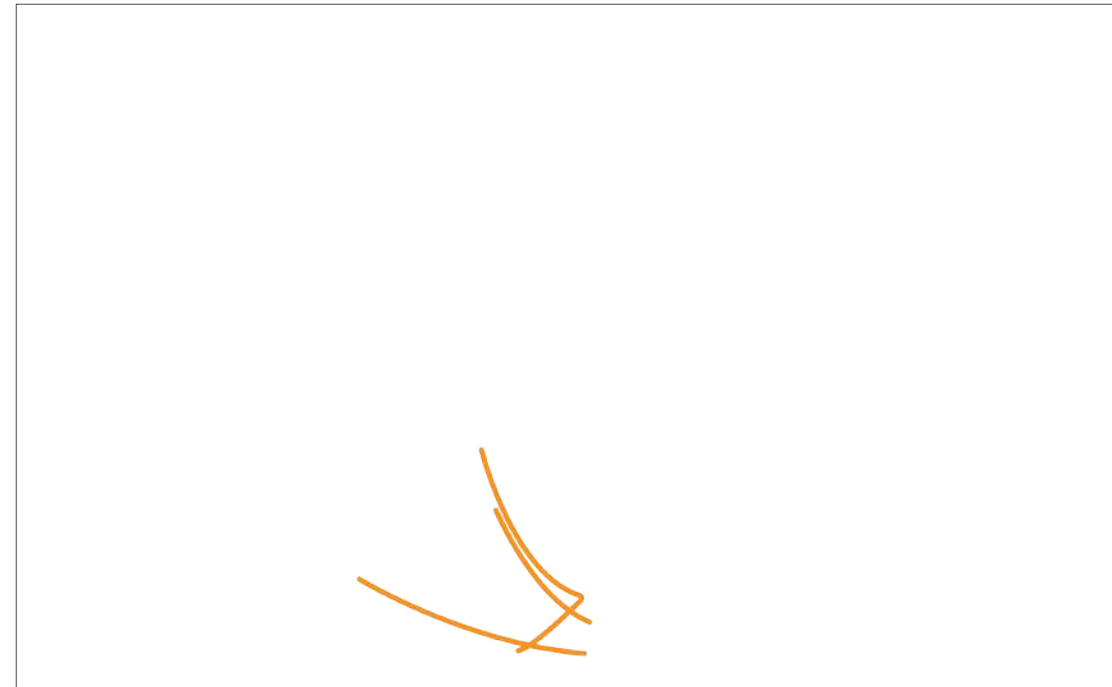
In my project, I also translated the dragging action into lines and trajectories. Through layering and contrast, I made these overlooked everyday digital operations visible, turning them into something that can be observed and reflected on.

Experiment — — week5

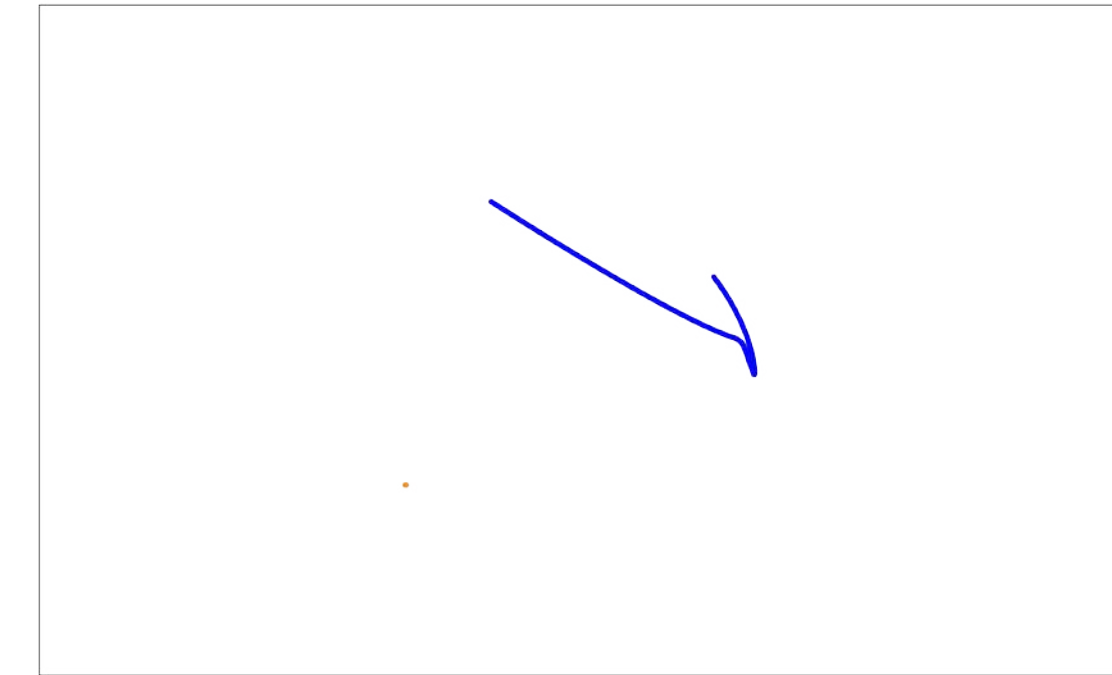
Translating2: I want to observe movement paths and trace them using lines.



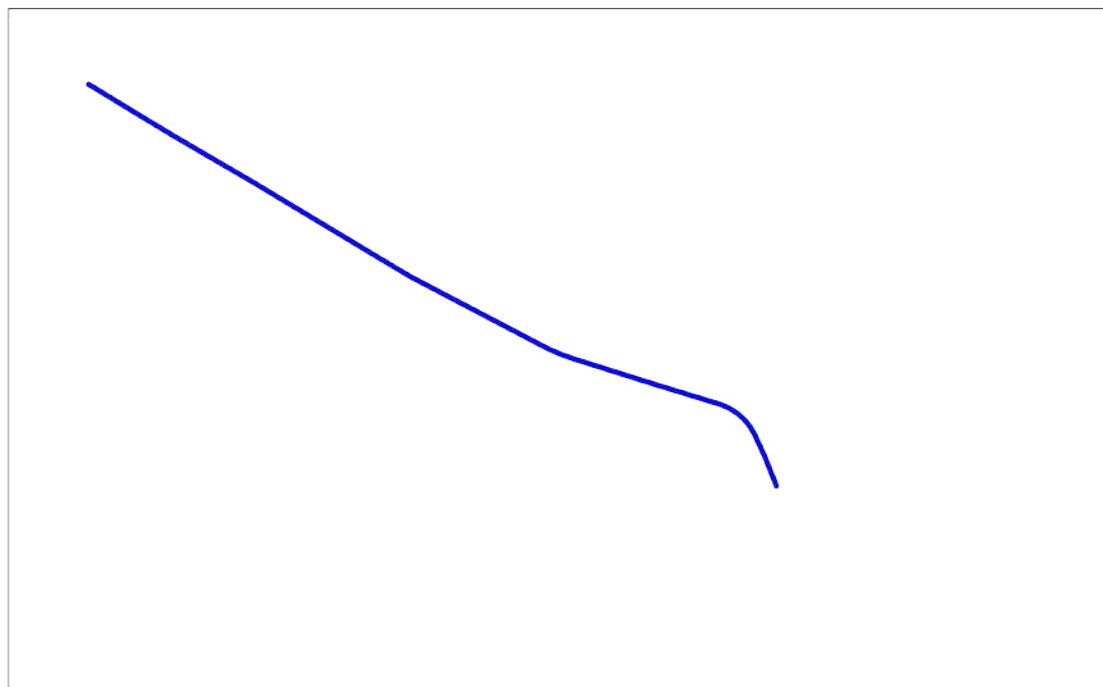
Windows
Z2 AIR 15.6"



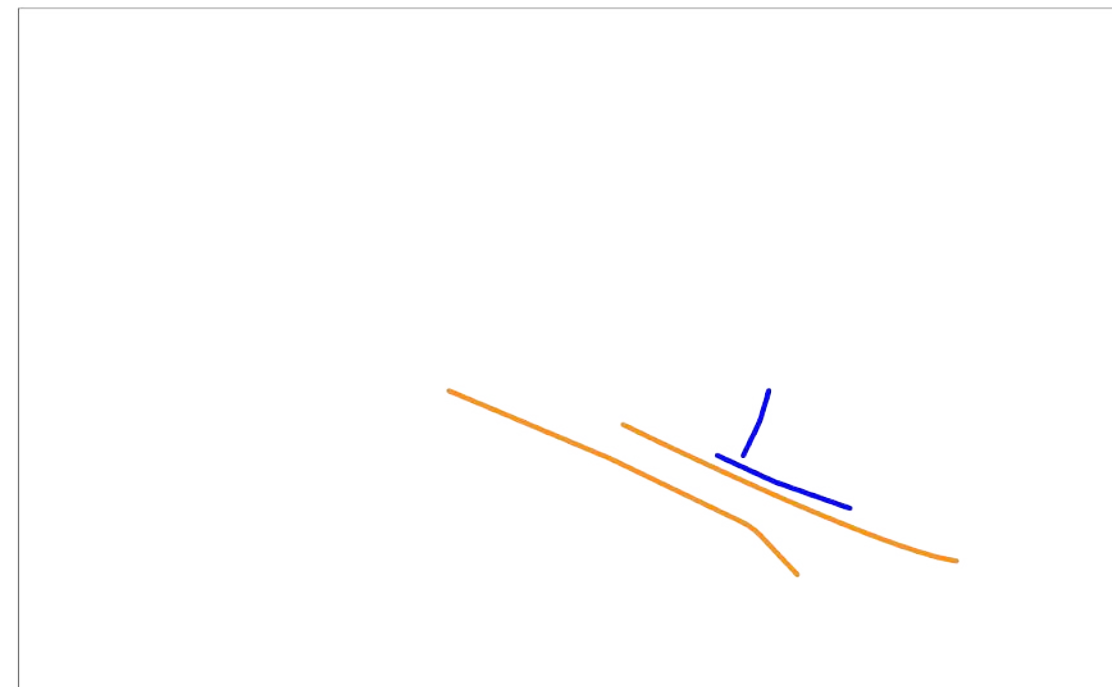
Windows
ROG 16"



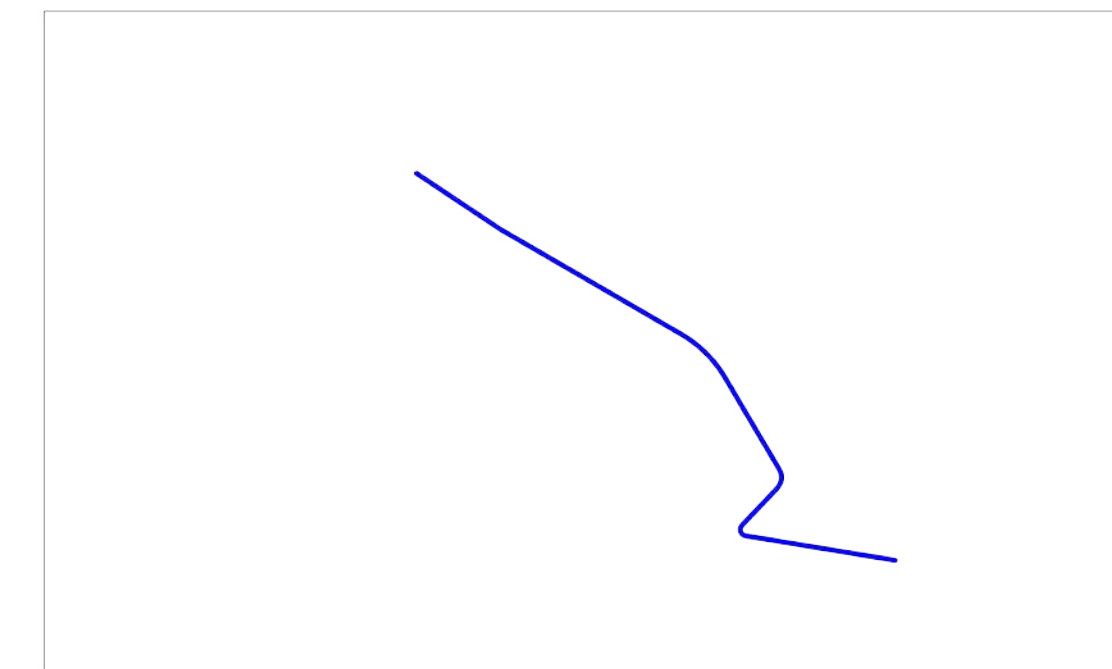
Windows
Lenovo Air 14"



macOS
Macbook Air 13"



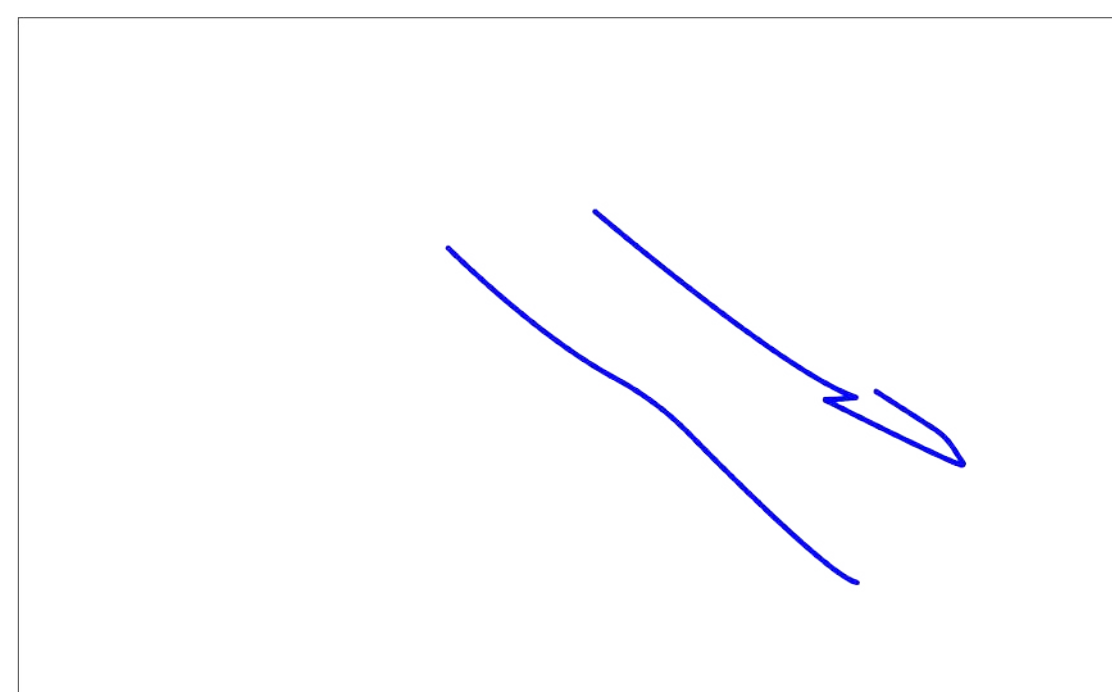
macOS
Macbook Air 13"



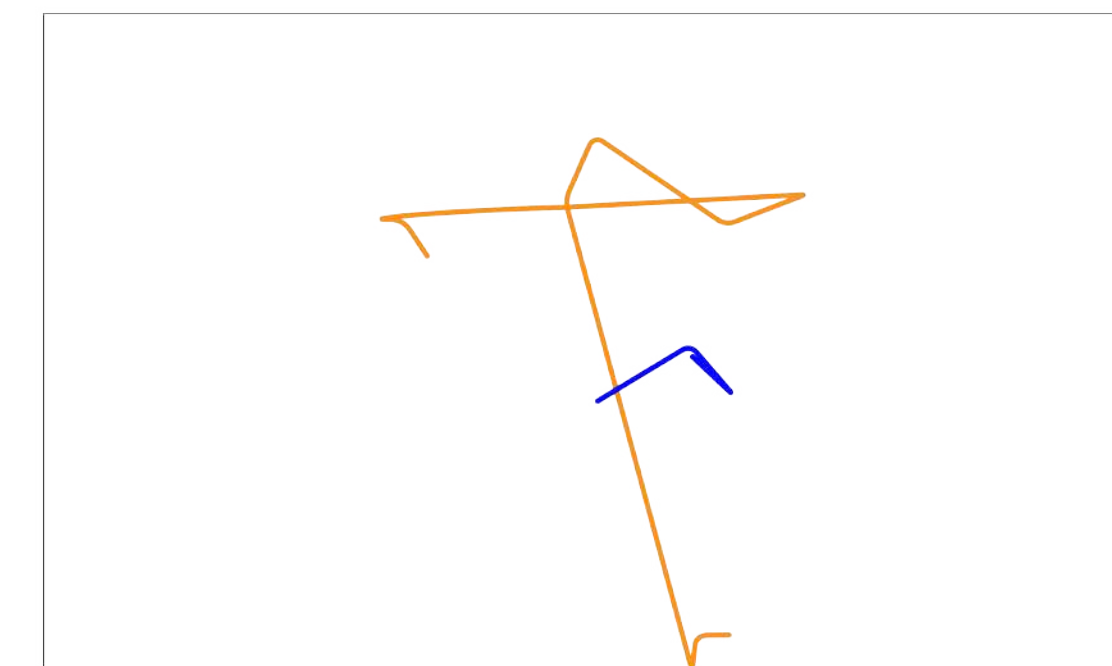
macOS
Macbook Pro 13"



macOS
Macbook Air 13"



macOS
Macbook Air 13"



macOS
Macbook Pro 14"

Reference

House-lives: Biographies in Quarantined Times

Introduction :

This project was created by undergraduate students from the AUIC School at the Polytechnic University of Milan. It explores biographies of home life during quarantine.

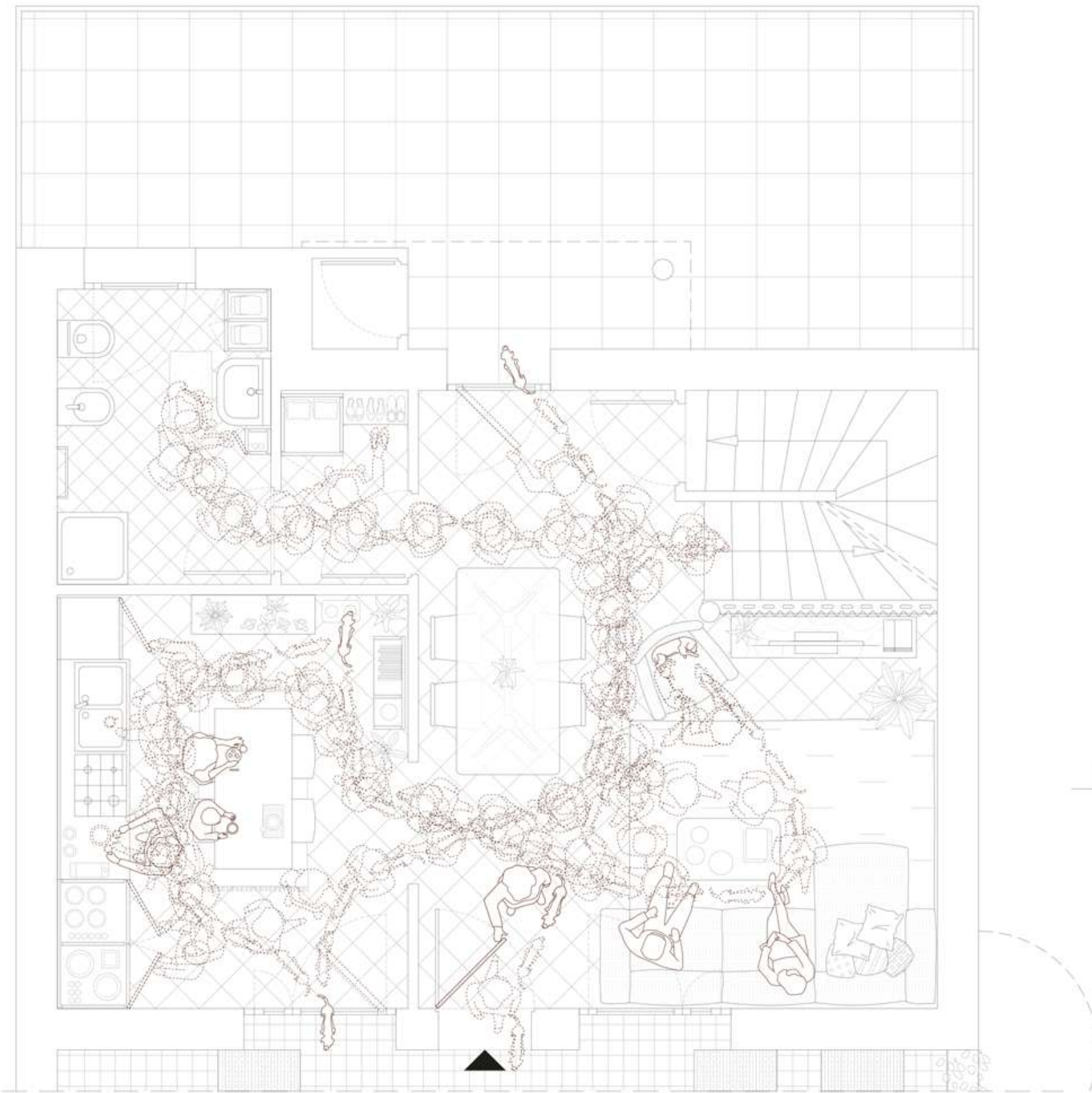
The students recorded people's daily movements inside their homes and translated these movements into visual images, creating a life archive based on bodily actions.

The movement paths in space were abstracted into line structures, turning everyday behaviour into visible "spatial traces."

My thought:

By recording people's movement paths inside the home, the project makes the spatial framework and the limits of action visible. Actions do not simply happen; they take place within a defined spatial structure.

I apply this idea to the digital environment, asking whether hardware also forms a kind of "space of action." By layering movement traces, I aim to reveal its scale and boundaries.



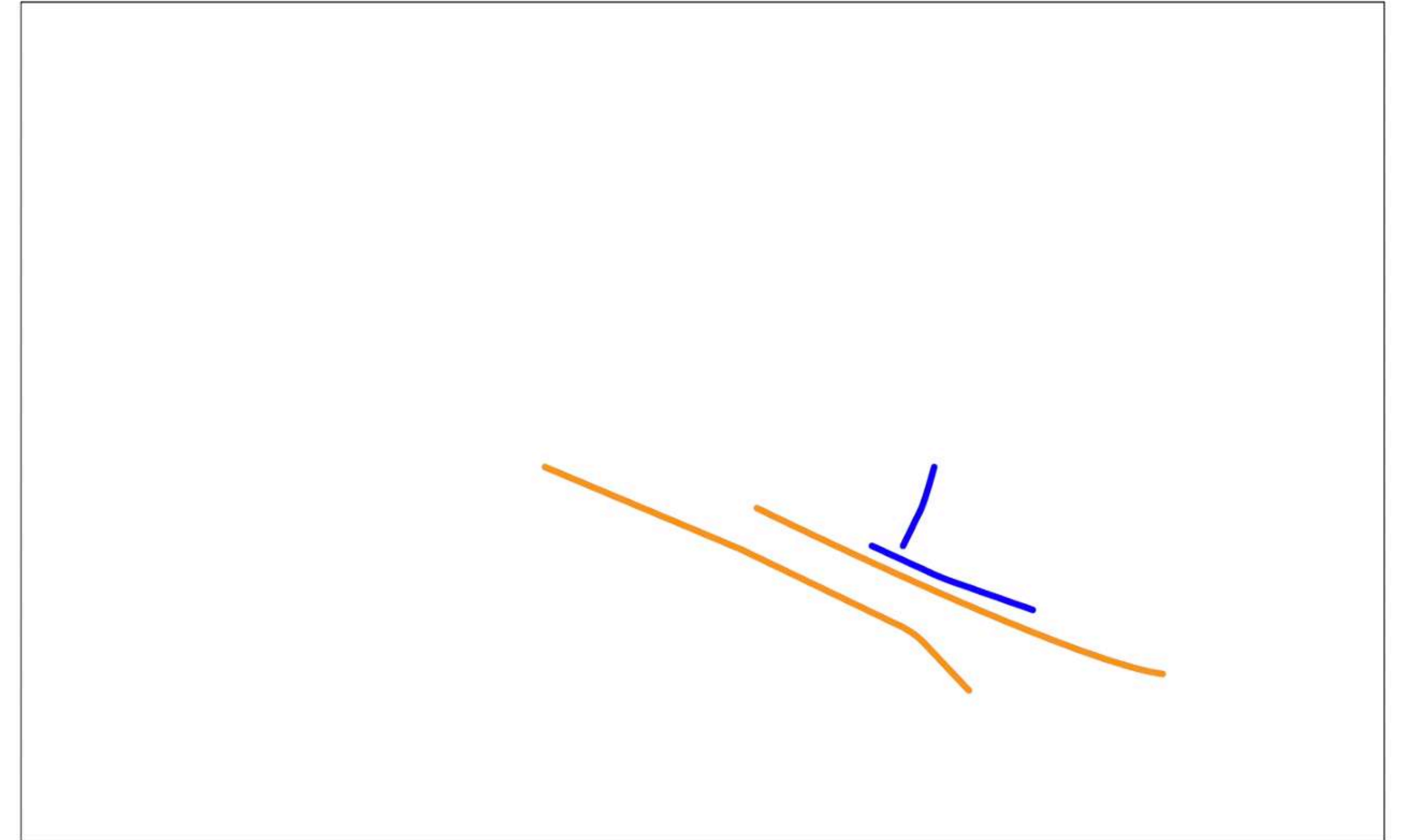
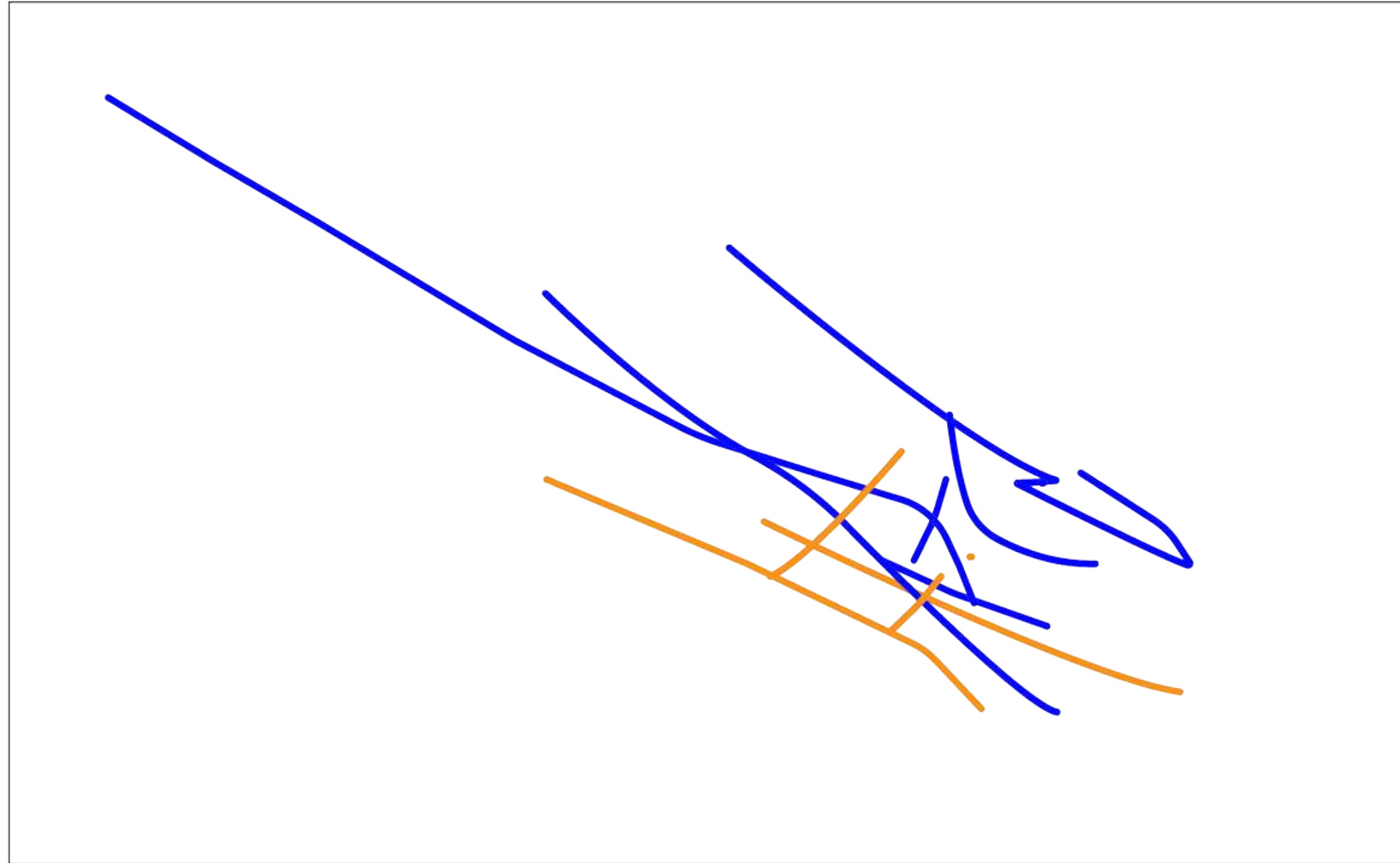
Ground floor

0 0.5 1 2m



Experiment — — week5

Trace — — Layering (four same devices)



macOS
Macbook Air 13"

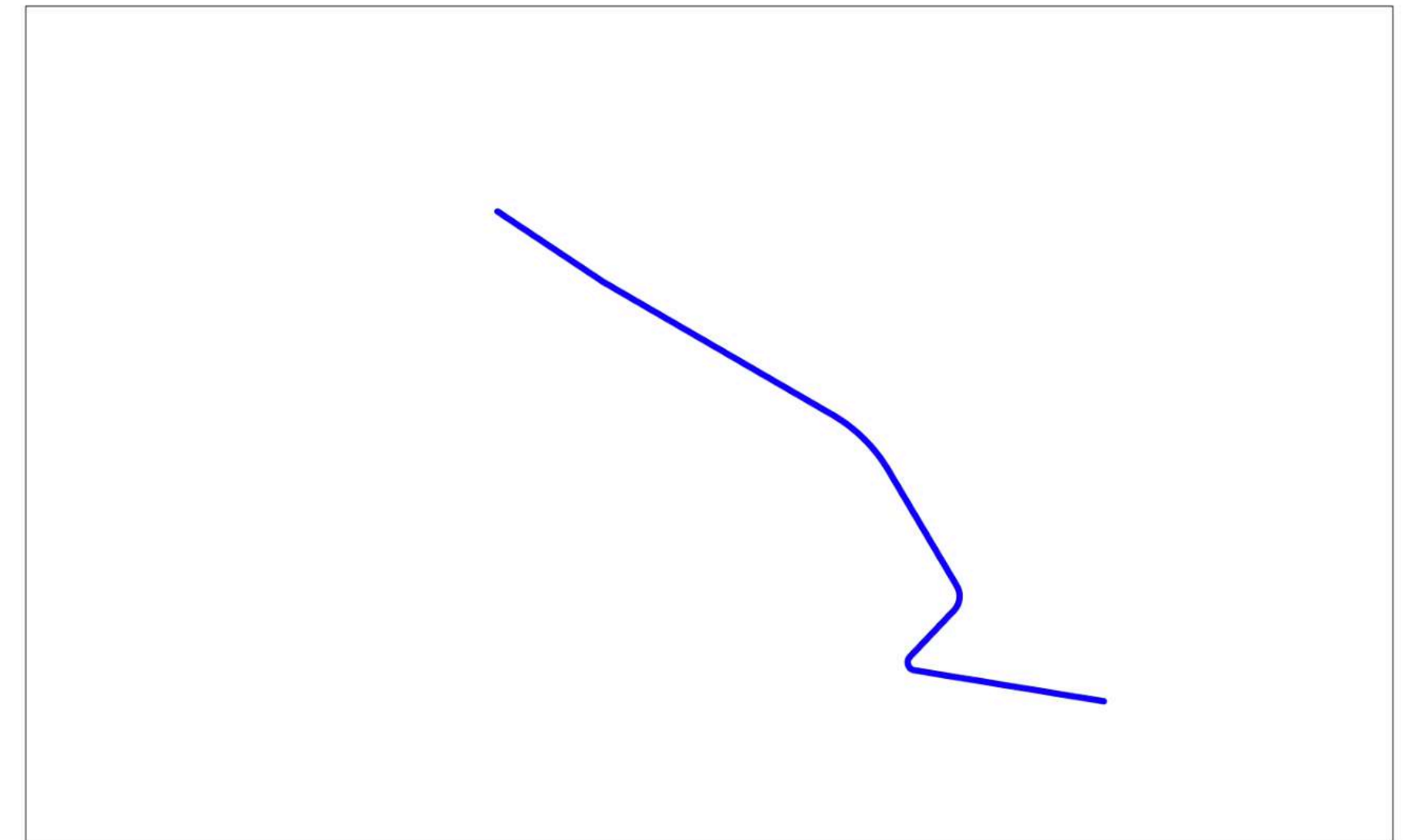
Experiment — — week5

Trace — — Layering (two different devices with different trackpad sizes)



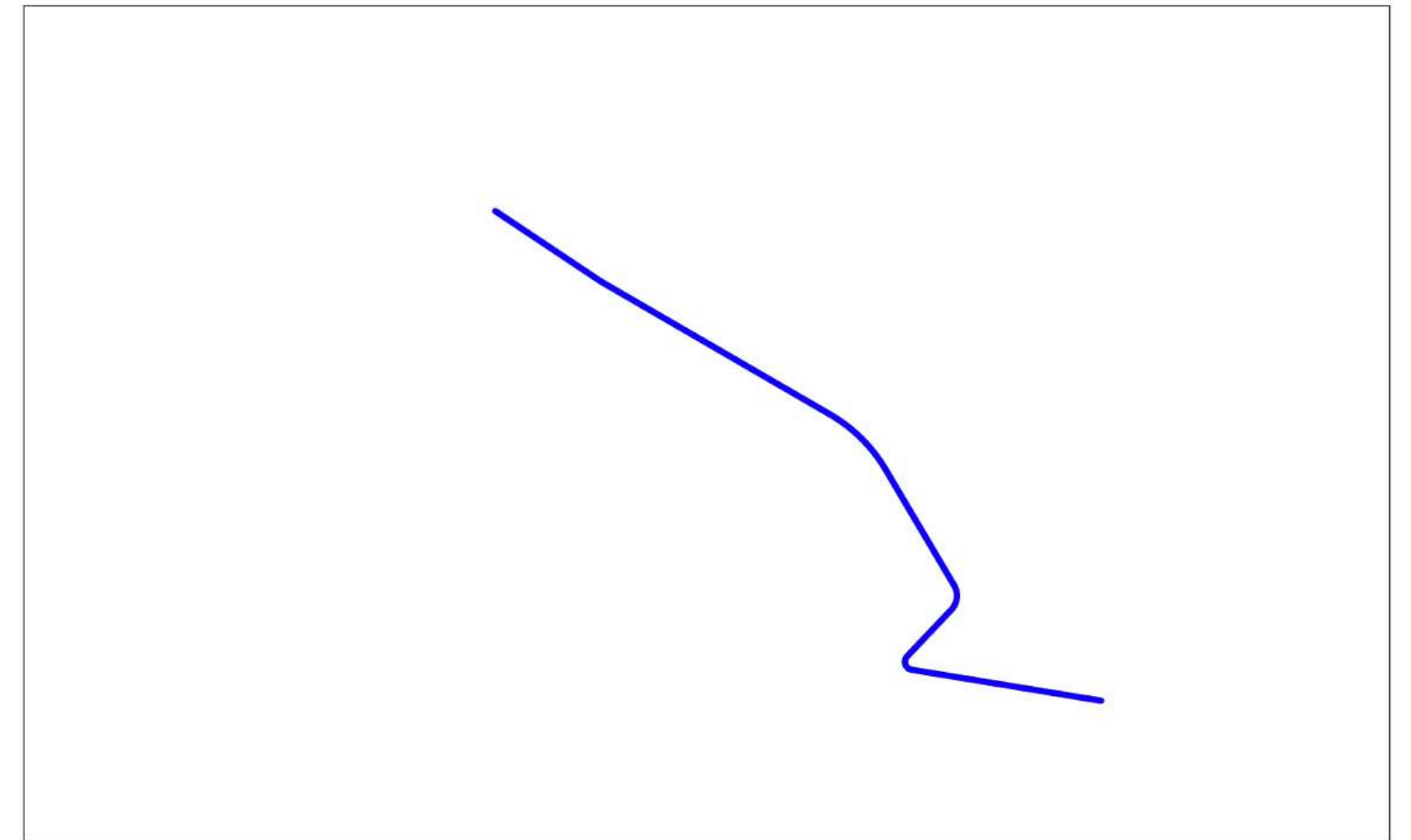
Windows ROG 16" (10 × 15cm)

macOS Macbook Pro 13" (8 × 13cm)



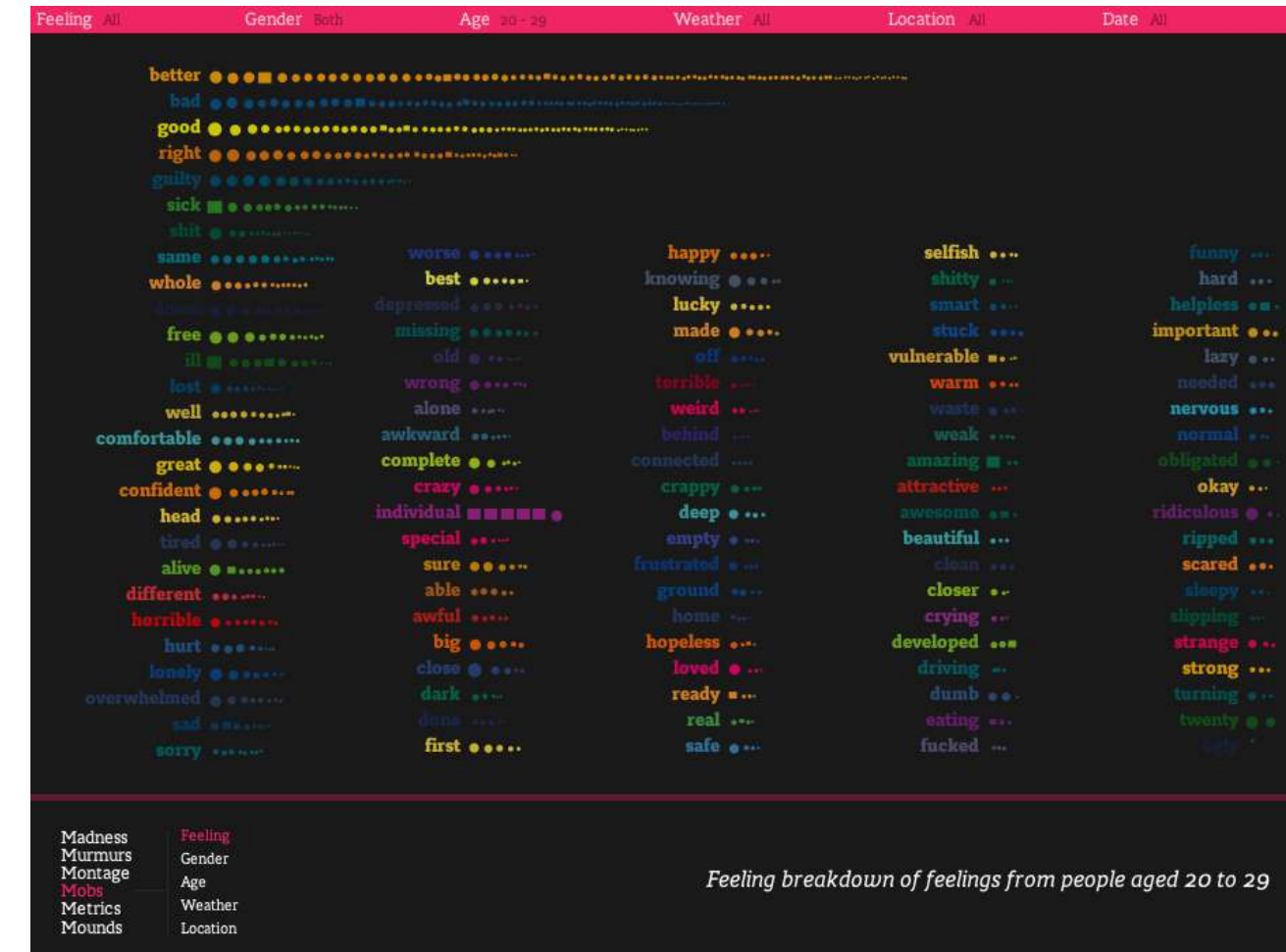
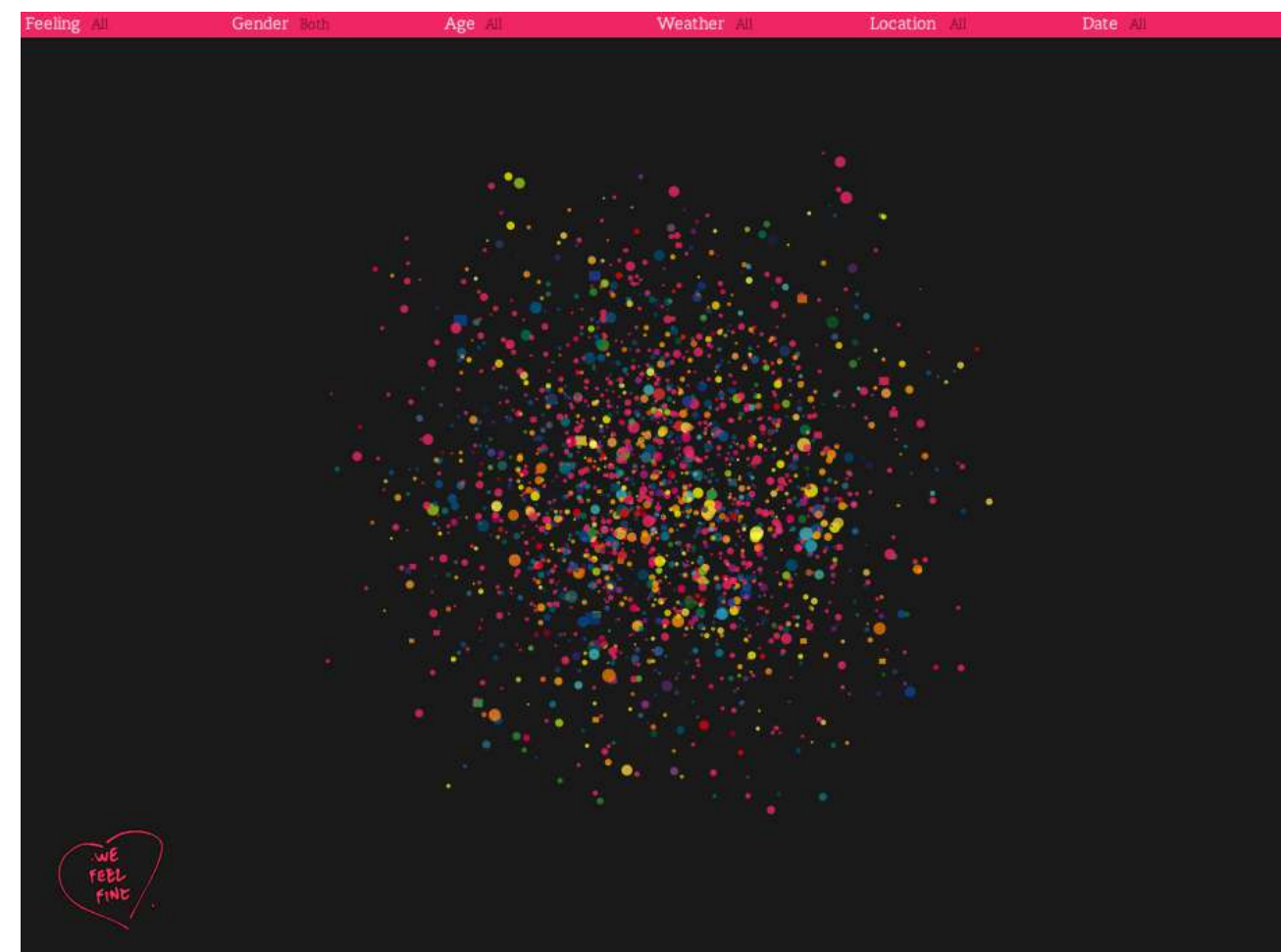
Experiment — — week5

Trace — — Layering (all materials combined)



Reference

We Feel Fine



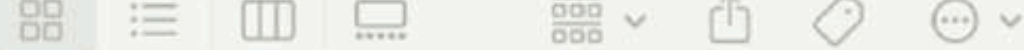
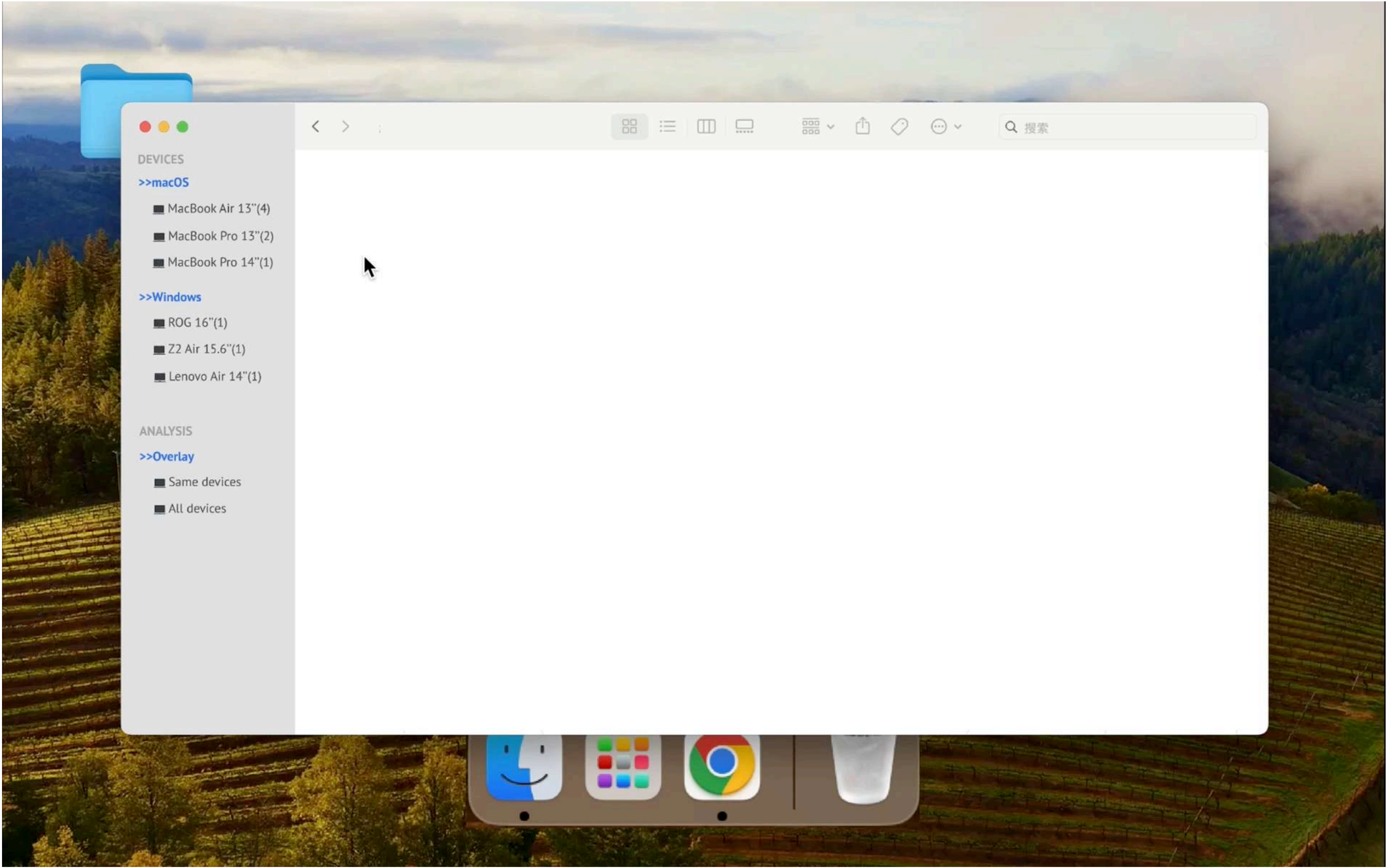
Introduction:

We Feel Fine is an interactive data project created in 2006 by Jonathan Harris and Sep Kamvar. It automatically collected sentences from the internet that contain “I feel,” gathering emotional expressions from people around the world. The data was then turned into a visual interface. Users can browse these emotion fragments in different ways, transforming scattered text into a dynamic and explorable visual system.

My thought:

We Feel Fine inspired me to see scattered individual actions as material that can be collected and structured. Just as the project reveals collective patterns by gathering emotional data, in my project I layer different users’ dragging traces to show how individual differences are generated within the same hardware structure.

At the media level, the project also inspired me to use an interactive website format. The audience is not passively viewing a final result. Instead, through clicking, filtering, and exploring, they gradually discover patterns and structures. Through this interactive approach, I hope viewers can become aware of how hardware influences bodily behavior while browsing and comparing the traces themselves.



搜索

DEVICES

>>macOS

- MacBook Air 13"(4)
- MacBook Pro 13"(2)
- MacBook Pro 14"(1)

>>Windows

- ROG 16"(1)
- Z2 Air 15.6"(1)
- Lenovo Air 14"(1)

ANALYSIS

>>Overlay

- Same devices
- All devices

