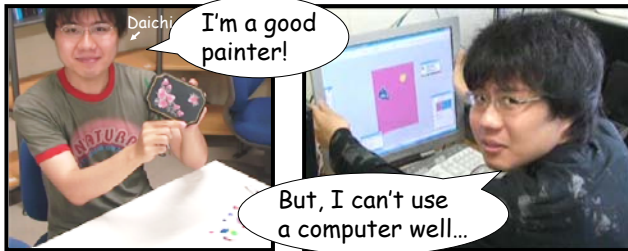


Daichi's artwork: Enjoyable painting and handcrafting with new ToolDevices

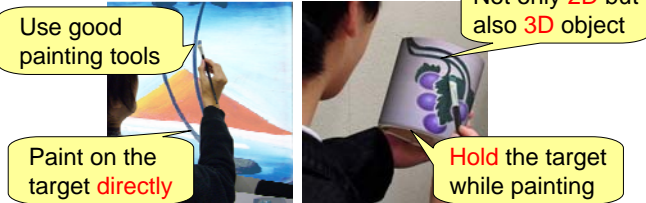


Yusuke Takami, Mai Otsuki, Asako Kimura, Fumihisa Shibata, and Hideyuki Tamura (Ritsumeikan Univ.)

Objective



In the real world...



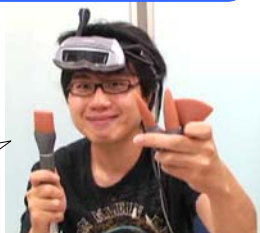
Our purpose

Develop a painting system that imitates painting **in the real world**

+ Requirements

- Intuitive device
- Direct operation
- Painting on real objects

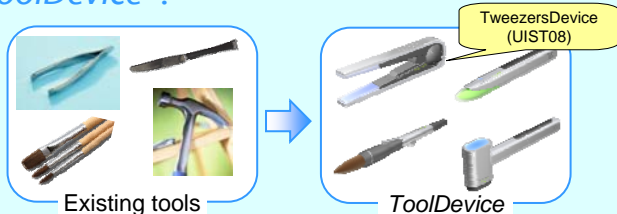
I can paint in a similar way to the real world!



What's

ToolDevice*?

- A **set** of interactive devices
- Uses a **metaphor of existing tools**



Advantages

- Guides users to the correct operation
- Provides intuitive operation

BrushDevice: a kind of ToolDevice

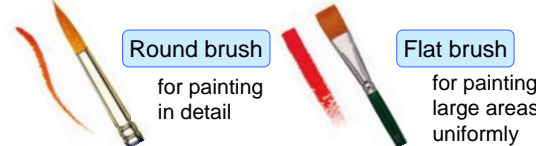
+ Concept

- Imitates the shape of a paintbrush familiar to many people
- Realizes subtle expressions in virtual reality as well as in the real world

+ Real paint brush characteristics

(1) Brush shape

Most paintbrushes fall into two categories:



(2) Brush stroke

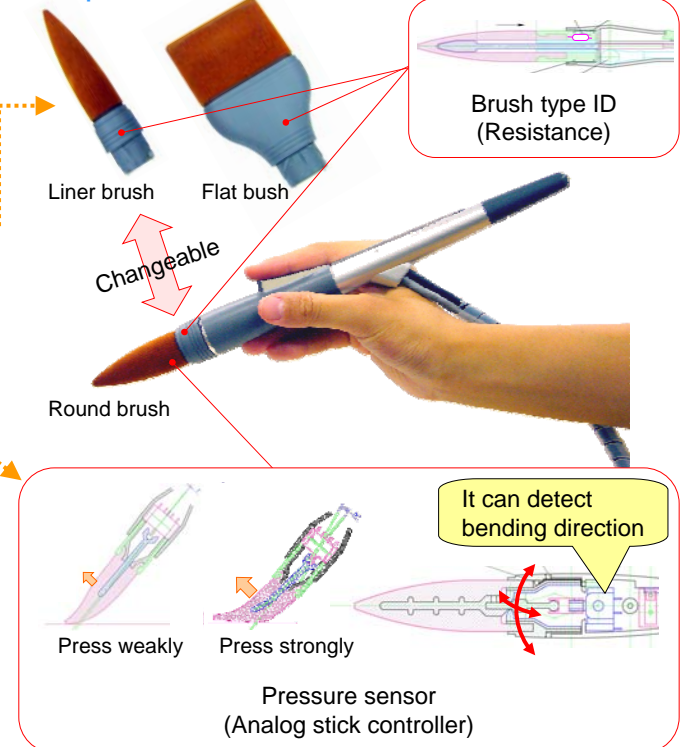
Stroke weight, opacity, or smoothness etc.



When users want to change the stroke weight...



+ Implementation



Application: Painting on real ceramics

+ Instruction

- ① Change/Select the brush type
- ② Pick a color & add water



③ Mix colors

④ Paint

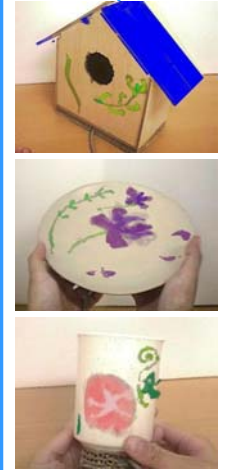


Demonstrating now!

Wet enough
A puddle appears at the stroke end

Not wet enough
The stroke lacks smoothness

+ Examples



Daichi's artworking: Enjoyable painting and handcrafting with new ToolDevices

Yusuke Takami, Mai Otsuki, Asako Kimura, Fumihisa Shibata, and Hideyuki Tamura
Ritsumeikan University

Abstract

We introduce a handcrafting application imitating "woodworking" in the real world. In conventional systems with a mouse and a 2D display, 3D digital modeling is not so easy for novices. We solve this problem by using a metaphor of woodworking and providing ToolDevice in the mixed reality space.

Background

- 3D modeling operations are not easy
- Complex GUI (menu, icon...)
- 2D input (Mouse)
- 2D output (Monitor)



Approach

- Imitate handcrafting in the real world
- Mixed Reality
- ToolDevice
- Firstly, we developed woodworking demo



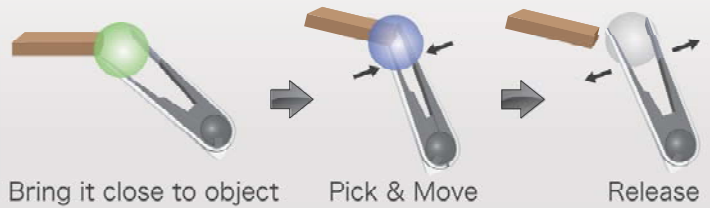
Image



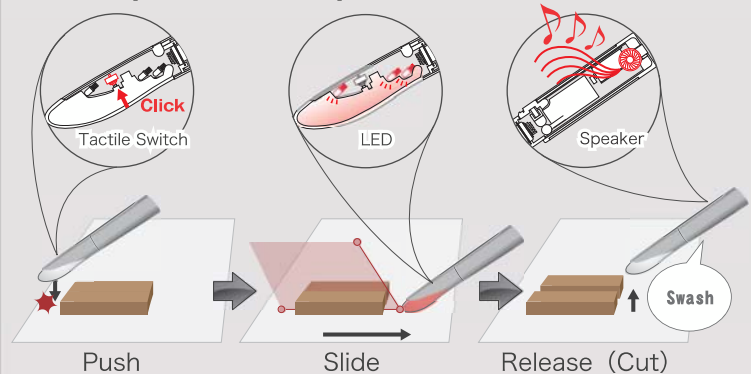
ToolDevice
(Tweezers, Knife, Hammer)

Interaction

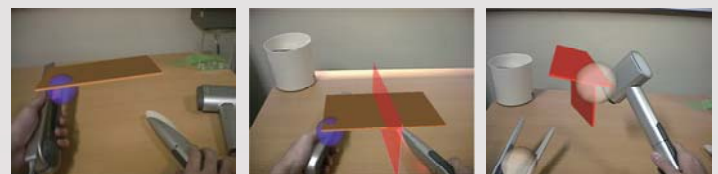
- Pick & Move (TweezersDevice)



- Cut (KnifeDevice)

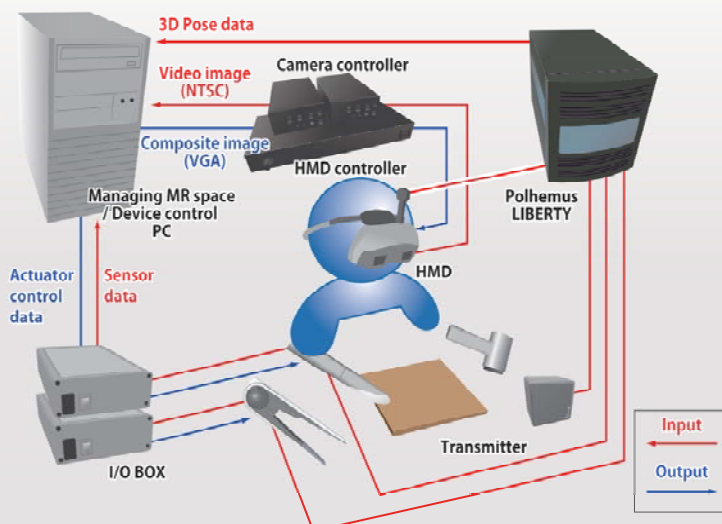


- Join (HammerDevice)



Scene of Operations
(Pick & Move, Cut, Join)

System



Artworks

