

# Hair Cutting Robot

Extending Human Ability, Expanding Access to  
Work

PolyU & FDS-PMINE

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Field of Dreams Studio

## What this project is about

### **Human-centred robotic haircutting.**

The system explores safe and precise remote services while keeping a professional in control.

### **Sensing and real-time control.**

Continuous feedback supports delicate work around the head.

### **Modular communication.**

MQTT connects independent components without assuming a finished system.

### **Accessible operation.**

The interface keeps human judgement and communication central.



# Why It Matters

## More than automation

### **Extend professional reach.**

The robot carries out permitted physical actions at a remote location.

### **Keep human responsibility.**

The operator remains responsible for style, communication, and judgement.

### **Constrain every action.**

Independent safety controls check commands before physical execution.

### **Explore before deployment.**

This is a research direction, not a completed commercial service.

## A pathway to inclusive work

### **Create a possible route into barbering.**

People with disabilities could train to operate the system as remote barbers.

### **Preserve the human service.**

Styling consultation, customer communication, and professional judgement can remain human-led.

### **Reduce access barriers.**

Remote work may reduce travel and workplace access barriers.

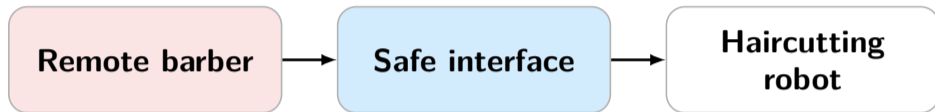
### **Design employment responsibly.**

Training must include safety, consent, accessible workflows, and professional practice. The idea is inspired by avatar-robot services that carry a person's skill and personality into a workplace.



## How It Connects

From operator to robot



**The interface is the safety boundary.**

It checks operator intent, confirmation, access needs, and system state before the robot receives a permitted action.

**MQTT and Hotaru connect the components.**

They can support message exchange and feedback without treating the complete system as already finished.

## Help shape the project

- Robotics and real-time control
- Human-robot interaction and accessible design
- Safety engineering and verification
- Barbering practice and social innovation

**Academic partner.** PolyU

**Technical collaboration.** FDS-PMINE / Hotaru

**Contact.** [aquilmirza.mohammed@polyu.edu.hk](mailto:aquilmirza.mohammed@polyu.edu.hk)