Electrical Engineering & Computer Science 498
Engineering Interactive Systems

Hand Gesture Recognition

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Introduction:

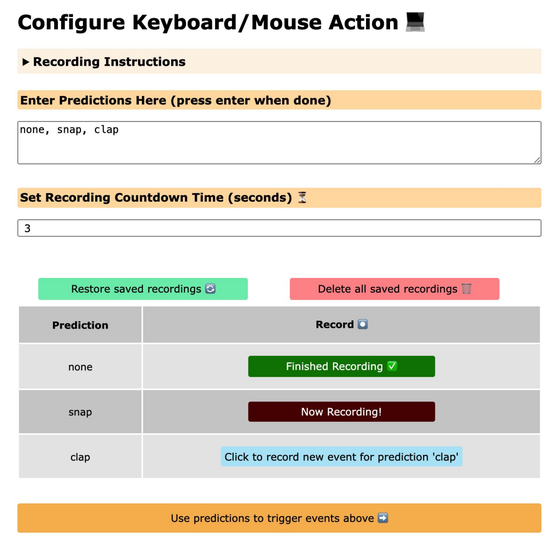
Control your laptop with hand gestures

Implementation

- **Transducer taped on the wrist sends high frequency acoustic signal**
- **VPU collects reflection signals**
- **T4Train classifies the collected data with a pretrained machine learning model**
- **Computer interface software converts the label to the corresponding keyboard command**

VPU sensor collected the sound

Transducer sending signal



Application:

Our project can be applied to many scenarios, such as…

- **Controlling a device without physically touching it**
- **Interpret ASL to text**
- **VR/AR gaming**

Problem Breakdown:

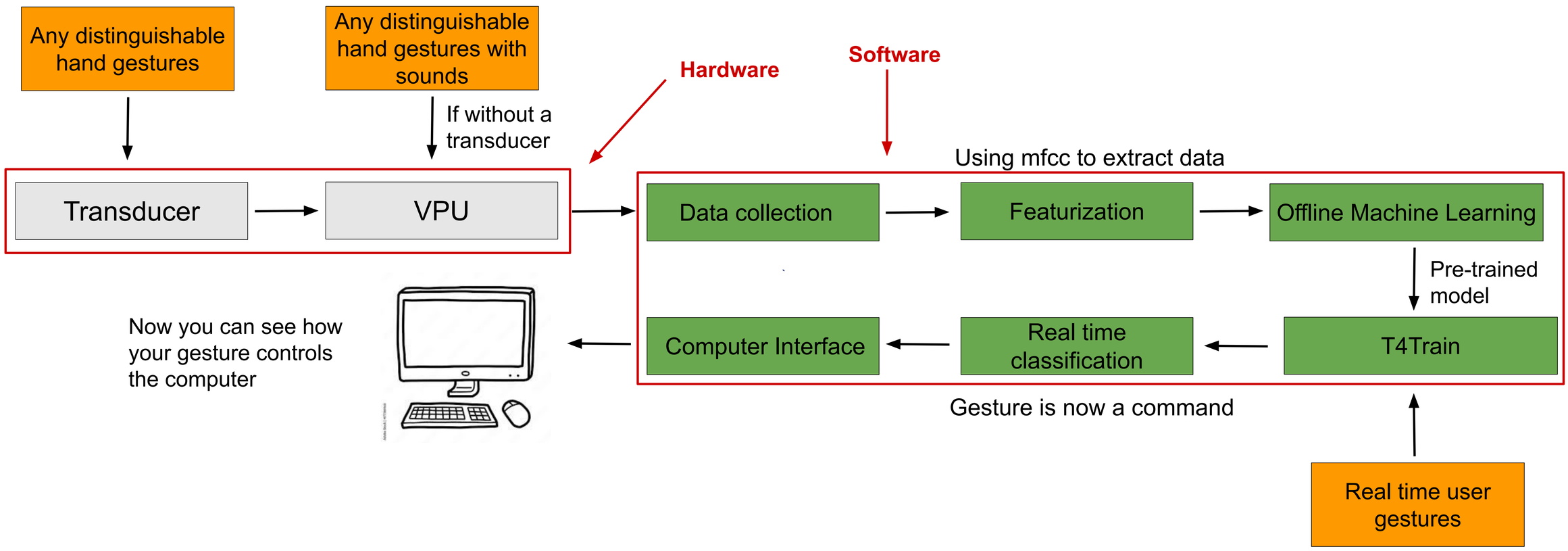
You made a hand gesture

How to convert this gesture into a computer readable data (VPU)

How to classify this data? (Machine learning)

How to convert this classification to a keyboard command? (User Interface)

Solution:



Future work:

- **Gather more gesture data to expand the gesture command library.**
- **Apply data augmentation on data collected with transducer.**