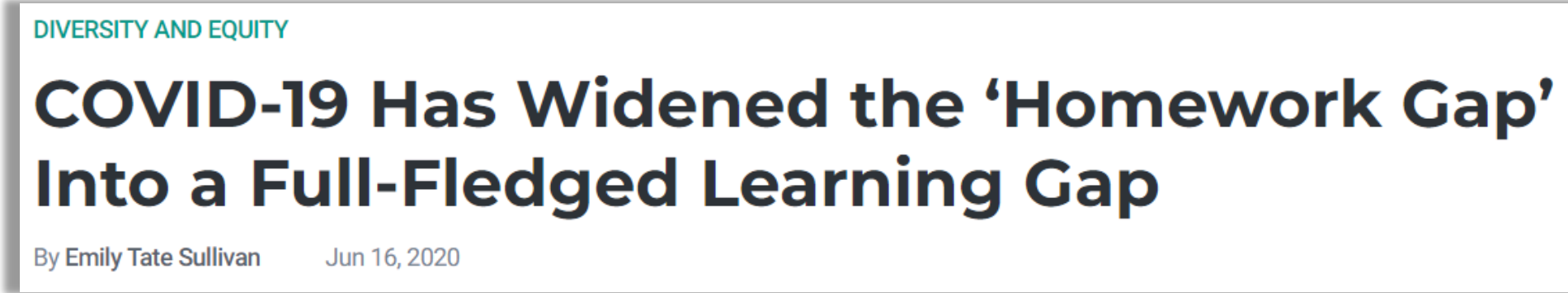


Introduction



- Education gap widens during calamities
- Rural/Urban divide
- Economic divide

The Problem

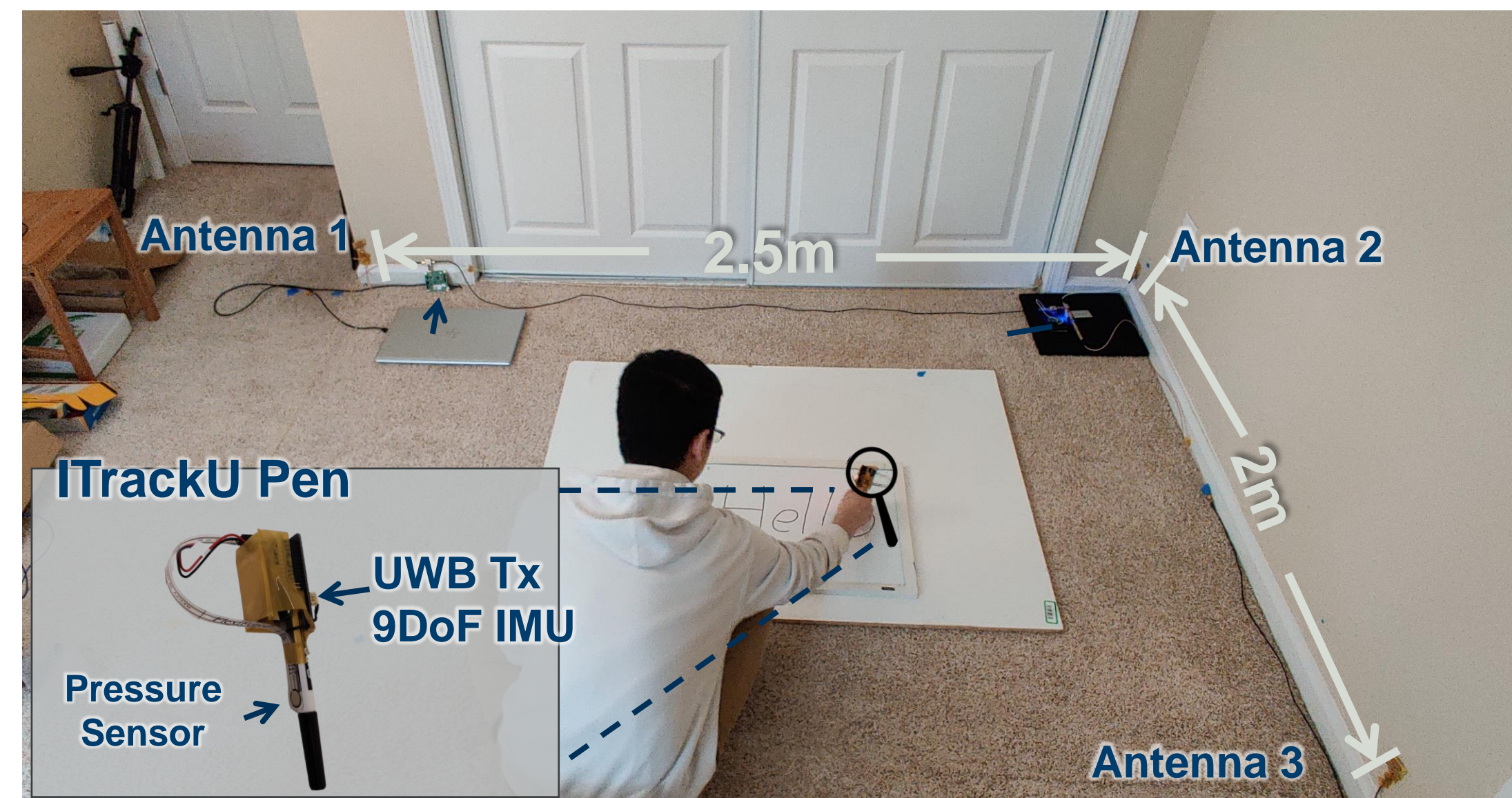
Need for high-speed Internet for video transmission



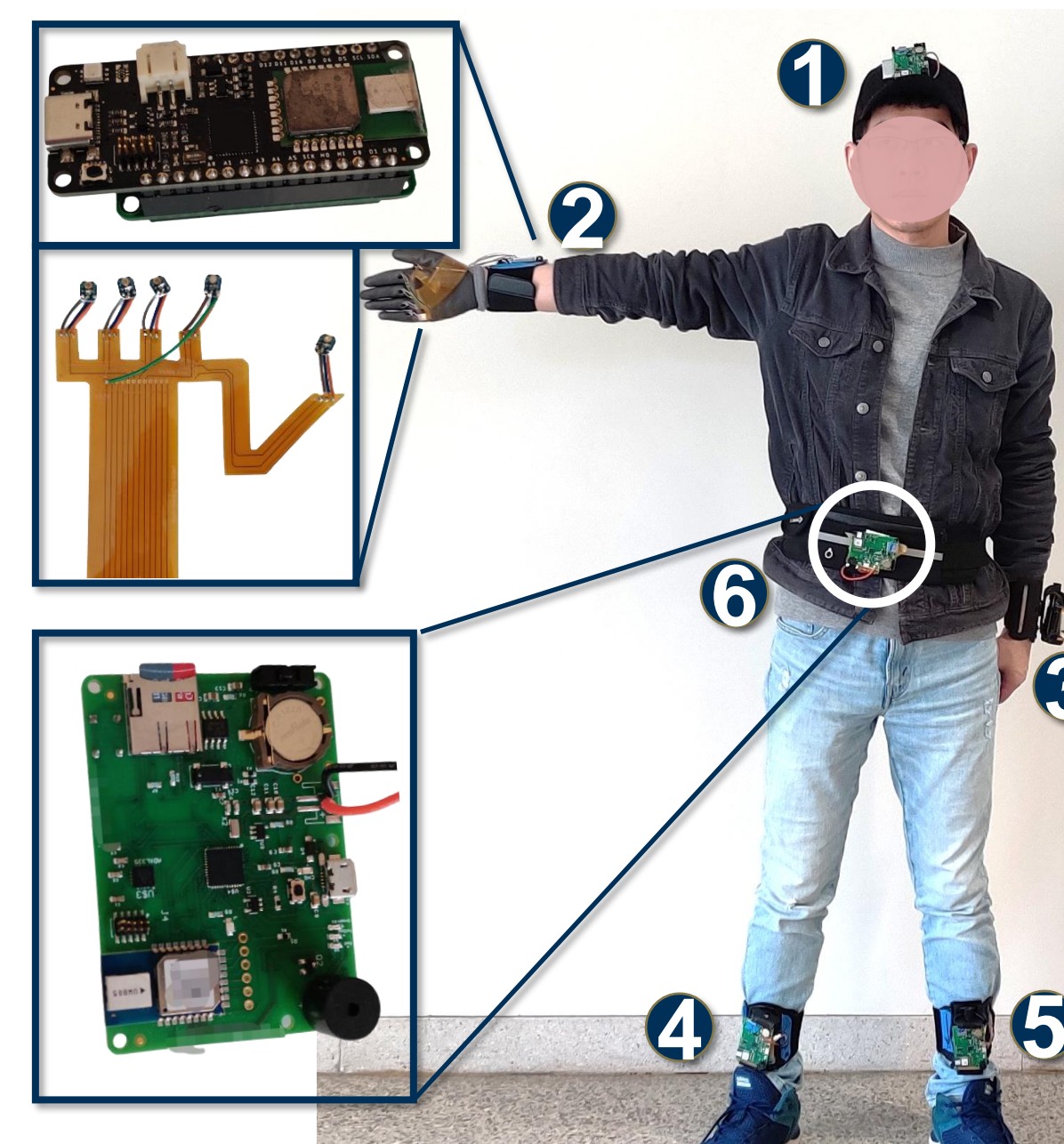
Our Approach

Develop a low-bandwidth solution: Uni-directional, audio, instructor avatar and whiteboard writings

Teacher's Pen and Pose Tracking

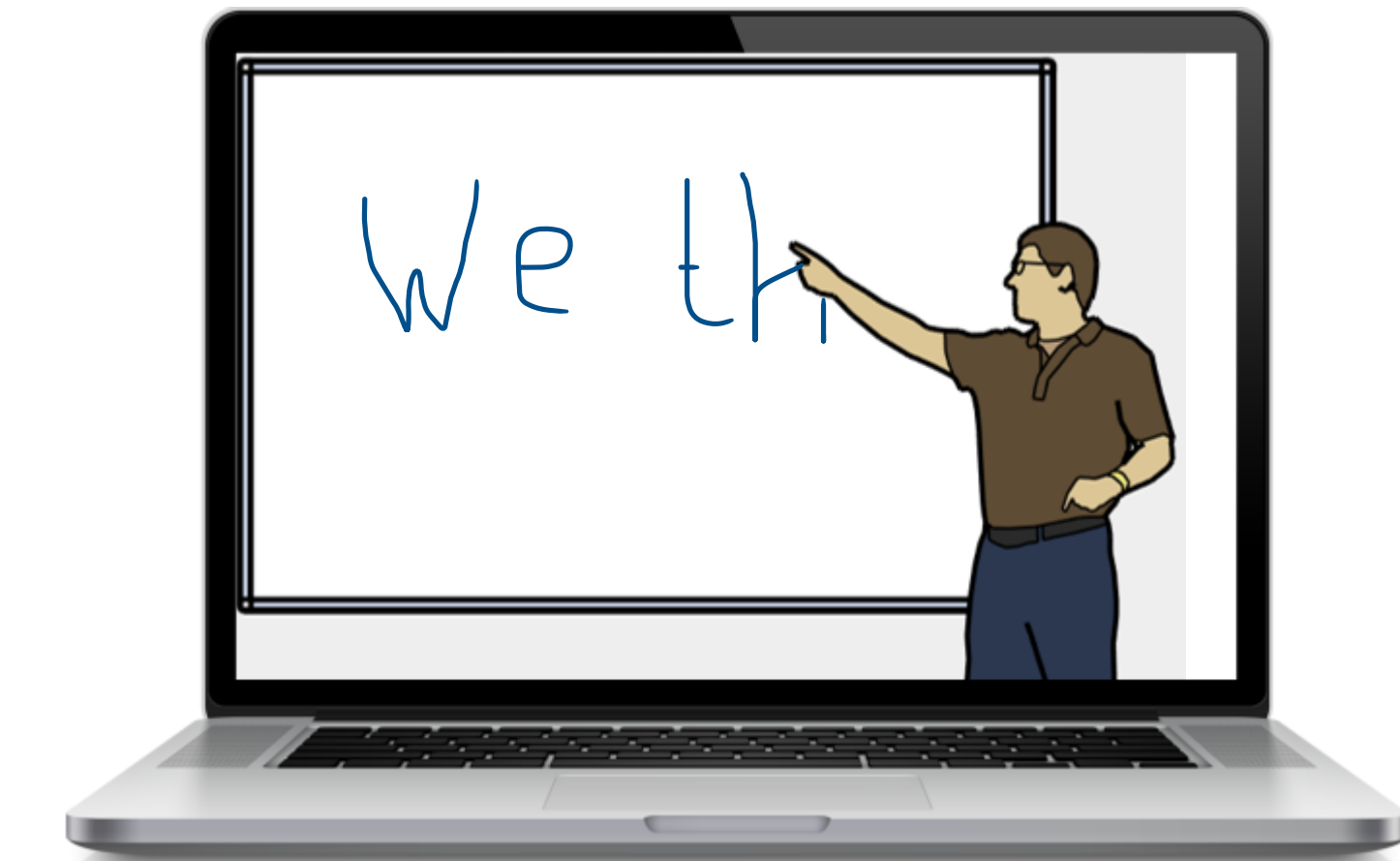


Localization of the pen and human pose tracking using UWB + IMU sensors



[ViSig, IMWUT '23]
[ITrackU, MobiSys '21]

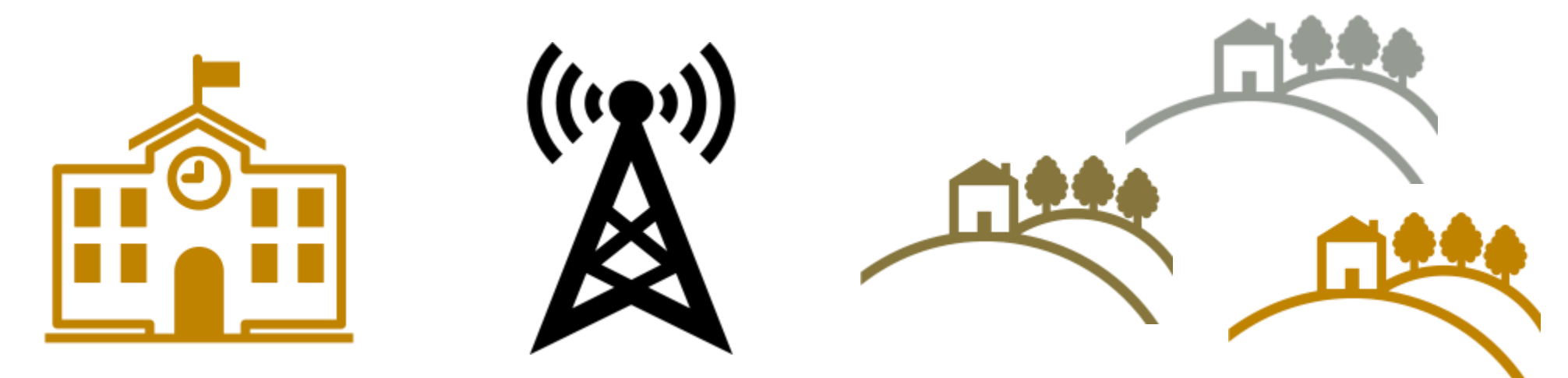
What Students See



Instructor avatar and whiteboard writings

Transmission Innovations

Low bandwidth needs, allow FM transmissions of data and audio



School → FM Radio → Homes

Future Work

How to enable a duplex channel?
Facial expressions of teacher?



Award# 2145278
Award# 2031868