

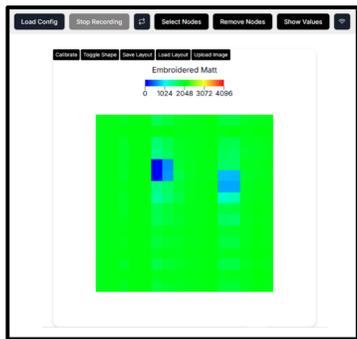
WiReSens Toolkit: An Open-source Platform towards Accessible Wireless Tactile Sensing

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Platform Overview

We created an open-source platform to facilitate deploying portable, adaptive, and efficient tactile sensing systems.

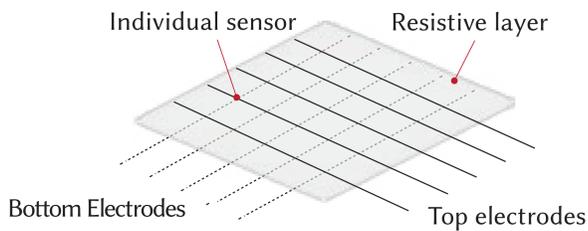


Software: Python-backed Web GUI



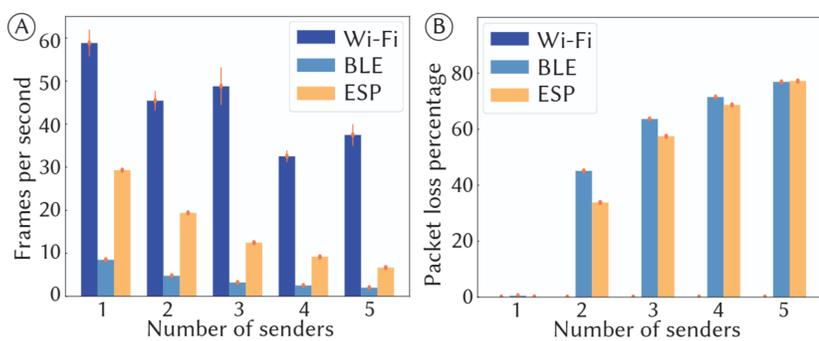
Hardware: Readout Circuit in Two Sizes

Resistive Sensing Principle



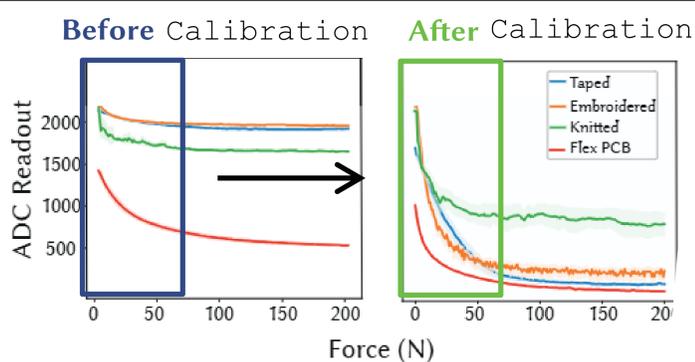
WiReSens supports resistive matrix-based tactile sensors, which measure pressure through changes in resistance across conductive elements separated by a piezoresistive material.

Portability via Wireless Comms



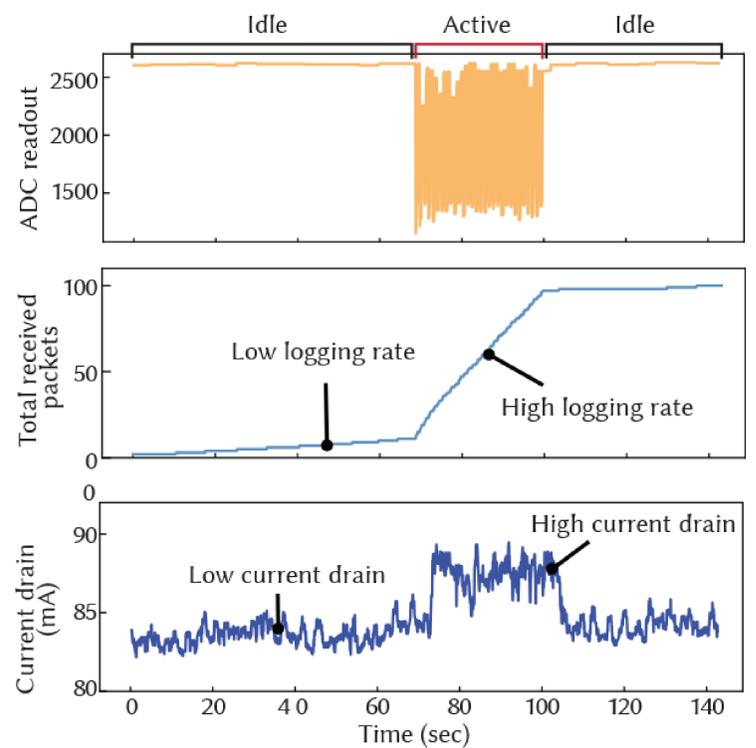
WiReSens allows users to deploy sensors using WiFi, Bluetooth, or ESP-NOW Protocols via clicks of a few buttons

Adaptivity via Sensitivity Tuning



Automatic gain calibration makes WiReSens compatible with a wide variety of sensors and force ranges

Efficiency via Intermittent Transmission



By transmitting data only when the device is interacted with, it can last 42% longer on a single charge

Applications



Posture monitoring pillow



Grip recording glove



Gait tracking shoe sole



Authenticating Welcome Mat



← Learn more about our open-source platform!

Questions? devinmur@uw.edu