Supporting Information for "Intelligent Shape Decoding of a Soft Optical Waveguide Sensor"

Chi Hin Mak[1], Yingqi Li[1], Kui Wang[1], Mengjie Wu[1], Justin Di-Lang Ho[1], Qi Dou[1], Kam-Yim Sze[1], Kaspar Althoefer[1], and Ka-Wai Kwok[1]

[1]Affiliation not available

January 30, 2023

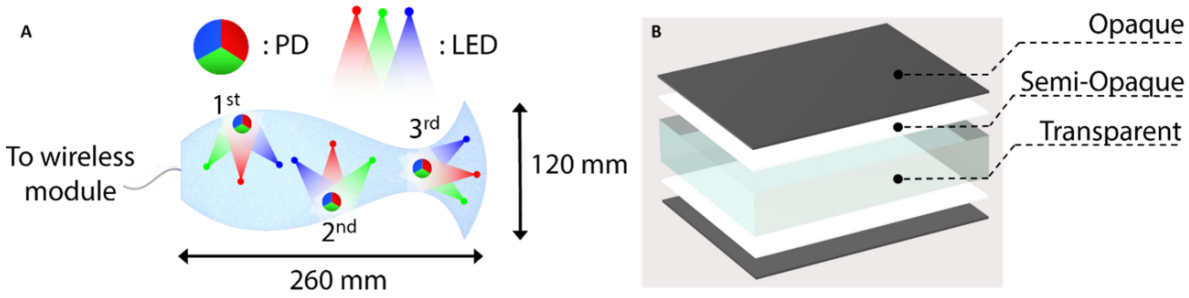

Figure S1. **(A)** LED & PD placement of the fish-shaped waveguide sensor. **(B)** Sandwiched PDMS structure of the soft waveguide sensor, where opaque and semi-opaque layers are silicone-dyed to enable internal reflection.

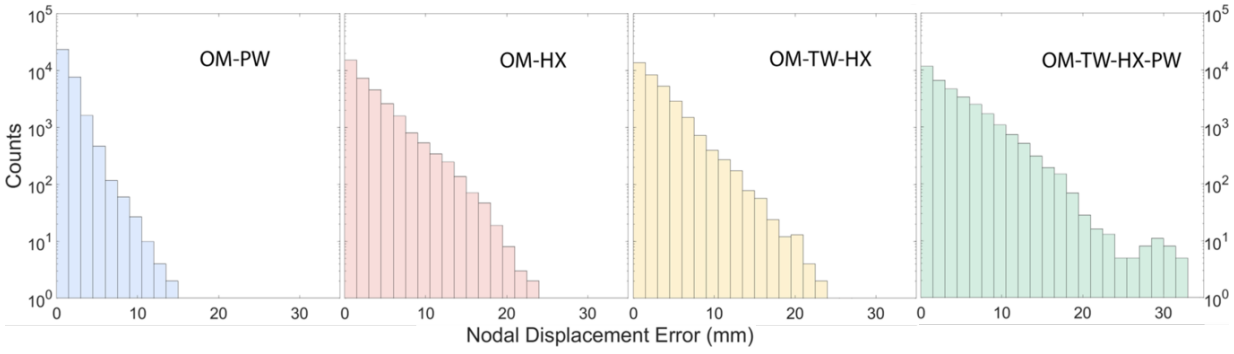

Figure S2. Nodal Displacement error of four models in the ablation study, which do not include three key components, namely time-window (TW), history (HX) module and patch-wise (PW) processing.

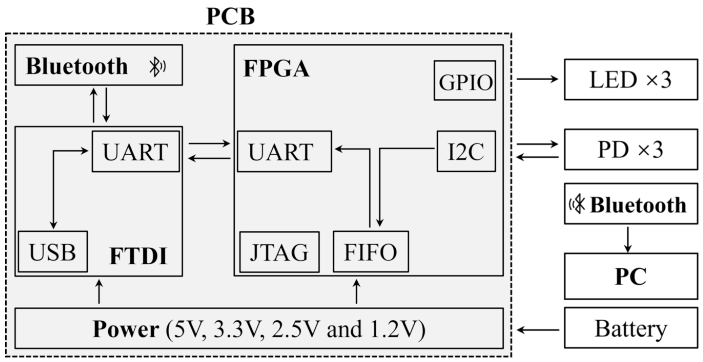

Figure S3. Schematic of the FPGA PCB used for both A5-sized and fish-shaped waveguide sensors, sufficient for 30min consecutive wireless sensing.

Supplementary Video V1

Rich media available at https://youtu.be/qhAY6MjuZ5k

Supplementary Video V2

Rich media available at https://youtu.be/tO2391ZXzgI

Supplementary Video V3

Rich media available at https://youtu.be/HOQDeonQlJo