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Supporting Information

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Machine Learning-Enabled Tactile Sensor Design for Dynamic Touch Decoding

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Algorithm 1 Extract data samples of a particular class

Input: anchor sample: $a(t)$, time series: $X(t)$, sliding step: τ, similarity metric: $S(x_i, x_j)$, number of target samples: N.

Output: list C, which contains cut samples.

$L \leftarrow length[X(t)]$ ▷ length of time series $X(t)$
$W \leftarrow length[a(t)]$ ▷ length of anchor sample $a(t)$
$I \leftarrow (L - W)//\tau$ ▷ iterations cost for searching
$C \leftarrow []$ ▷ empty list for saving cut samples
$sim\_list \leftarrow 0_{[I \times 1]}$ ▷ array for saving calculated similarities
for $i = 1 \rightarrow I$ **do**
    $temp = X[i \times \tau : (i + 1) \times \tau]$
    if $length(temp) == W$ **then**
        $sim \leftarrow S(a, temp)$
        $sim\_list[i] \leftarrow sim$
        append $temp$ to C
    end if
end for
rank C refer to sim_list in descending order.
$C \leftarrow C[0 : N]$
return C