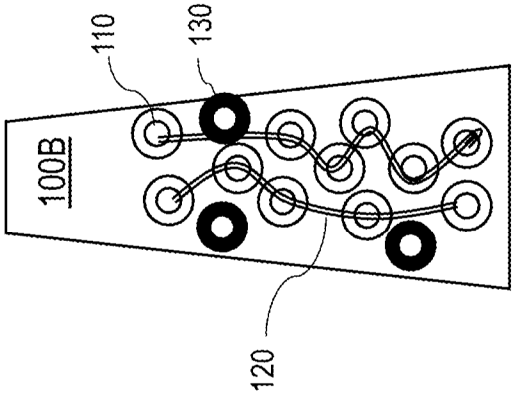


FIG. 1B

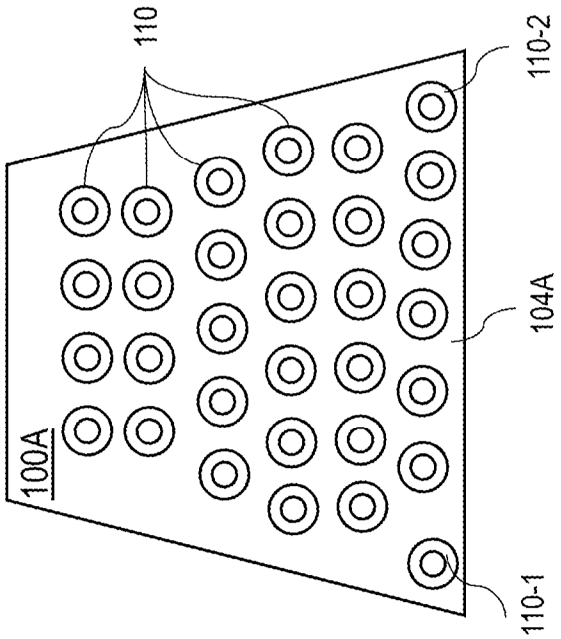


FIG. 1A

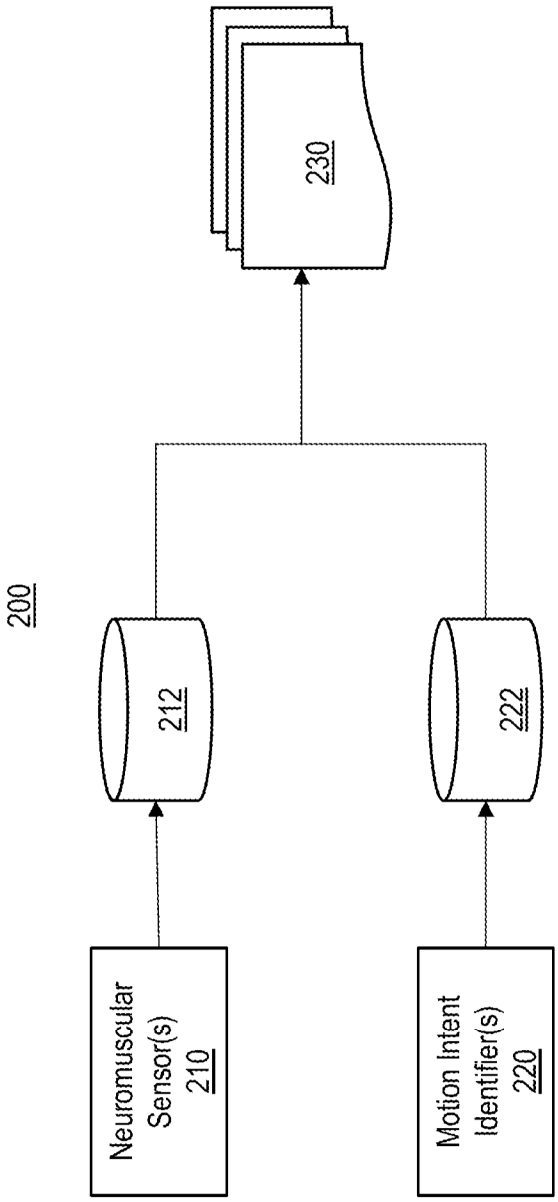

200
230
212
222
Neuromuscular Sensor(s) 210
Motion Intent Identifier(s) 220

FIG. 2

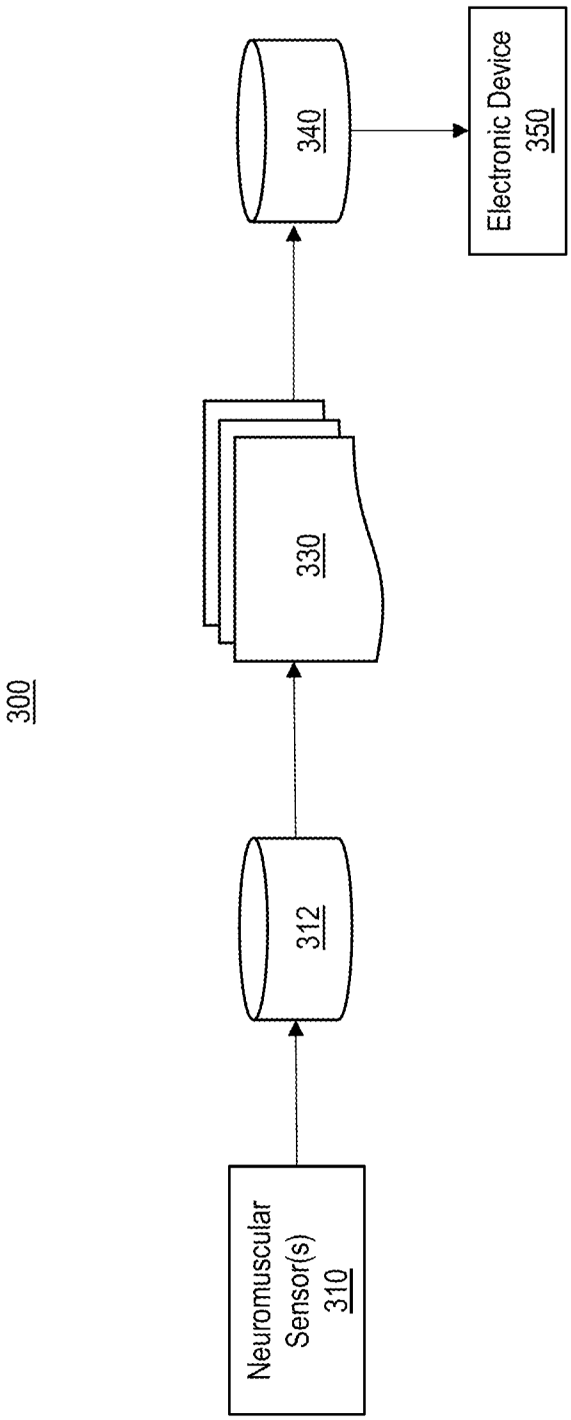

300
Neuromuscular Sensor(s) 310
312
330
340
Electronic Device 350

FIG. 3

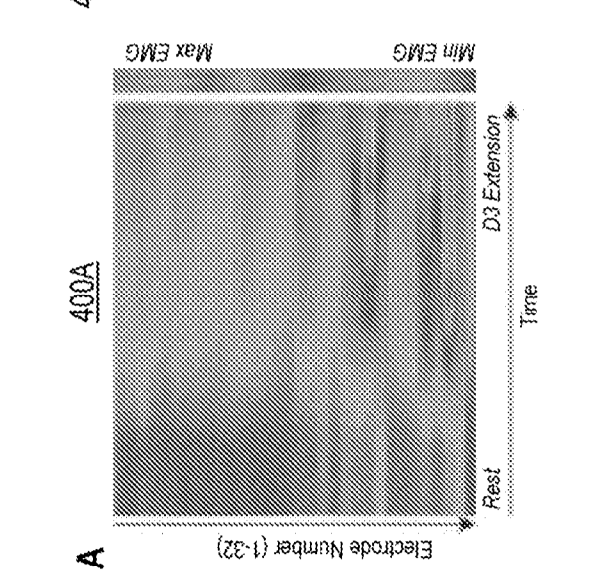

A
400A
Electrode Number (1-32)
Time
D3 Extension
Rest
Min EMG
Max EMG

FIG. 4A

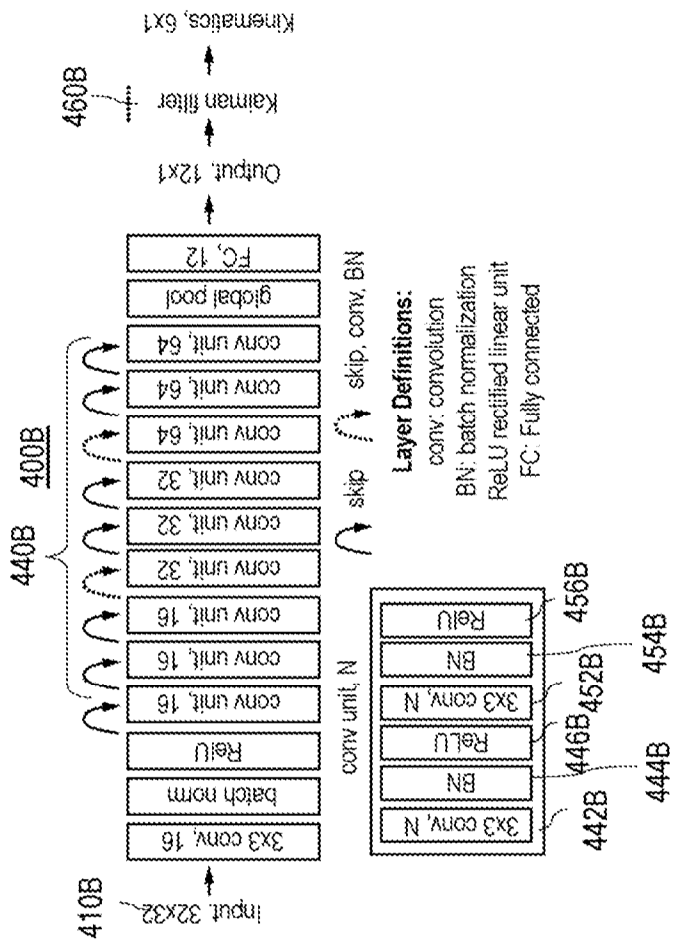

410B
input, 32x32
3x3 conv, 16
batch norm
ReLU
440B
400B
conv unit, 16
conv unit, 16
conv unit, 16
conv unit, 32
conv unit, 32
conv unit, 32
conv unit, 64
conv unit, 64
conv unit, 64
global pool
FC, 12
Output, 12x1
460B
Kalman filter
Kinematics, 6x1
skip
skip, conv, BN
conv unit, N
3x3 conv, N
BN
ReLU
3x3 conv, N
BN
ReLU
442B
444B
446B
452B
454B
456B
Layer Definitions:
conv: convolution
BN: batch normalization
ReLU rectified linear unit
FC: Fully connected

FIG. 4B

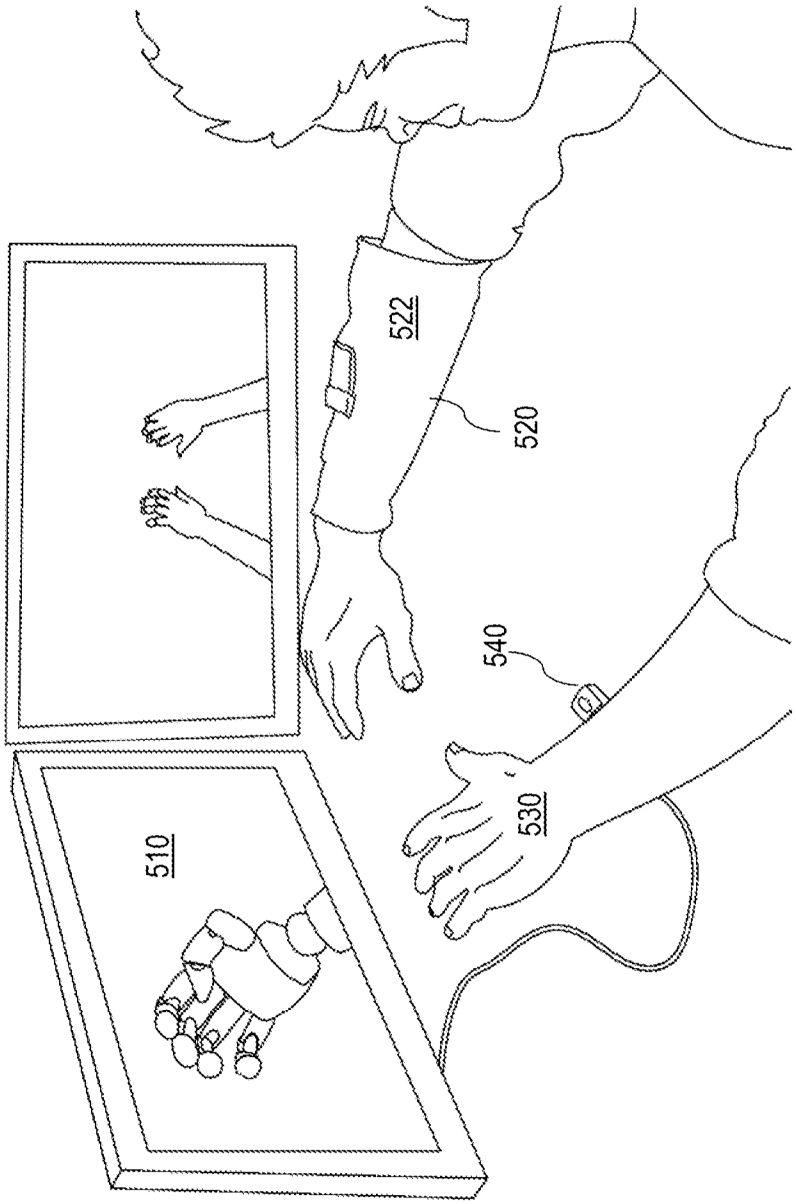


FIG. 5

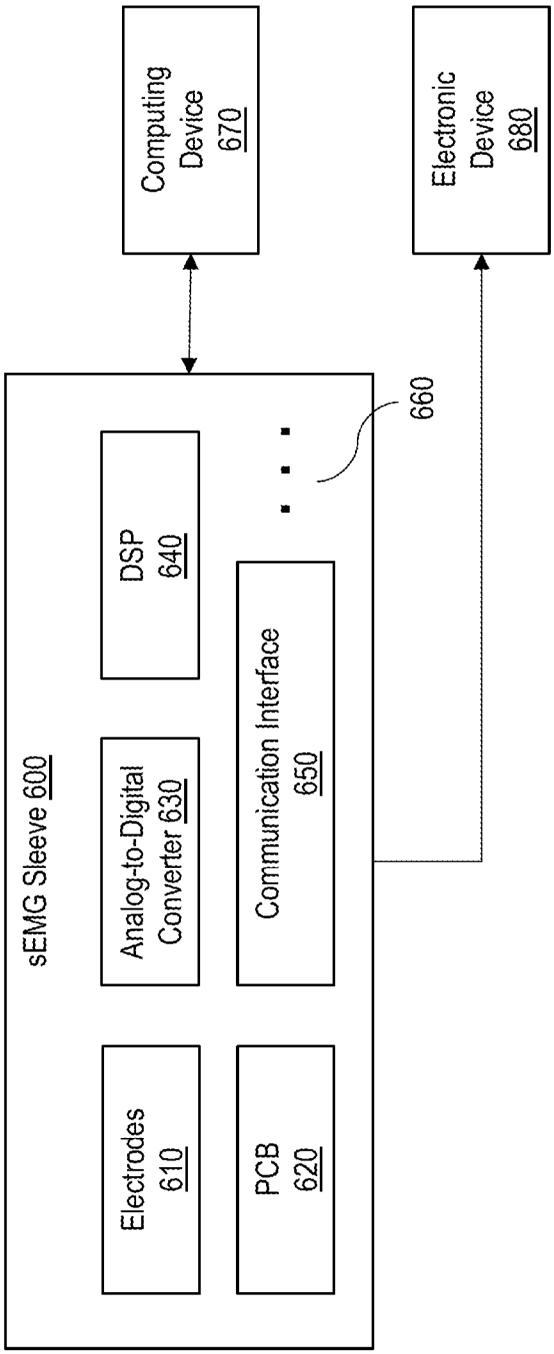

Computing Device 670
Electronic Device 680
sEMG Sleeve 600
DSP 640
Analog-to-Digital Converter 630
Communication Interface 650
660
Electrodes 610
PCB 620

FIG. 6

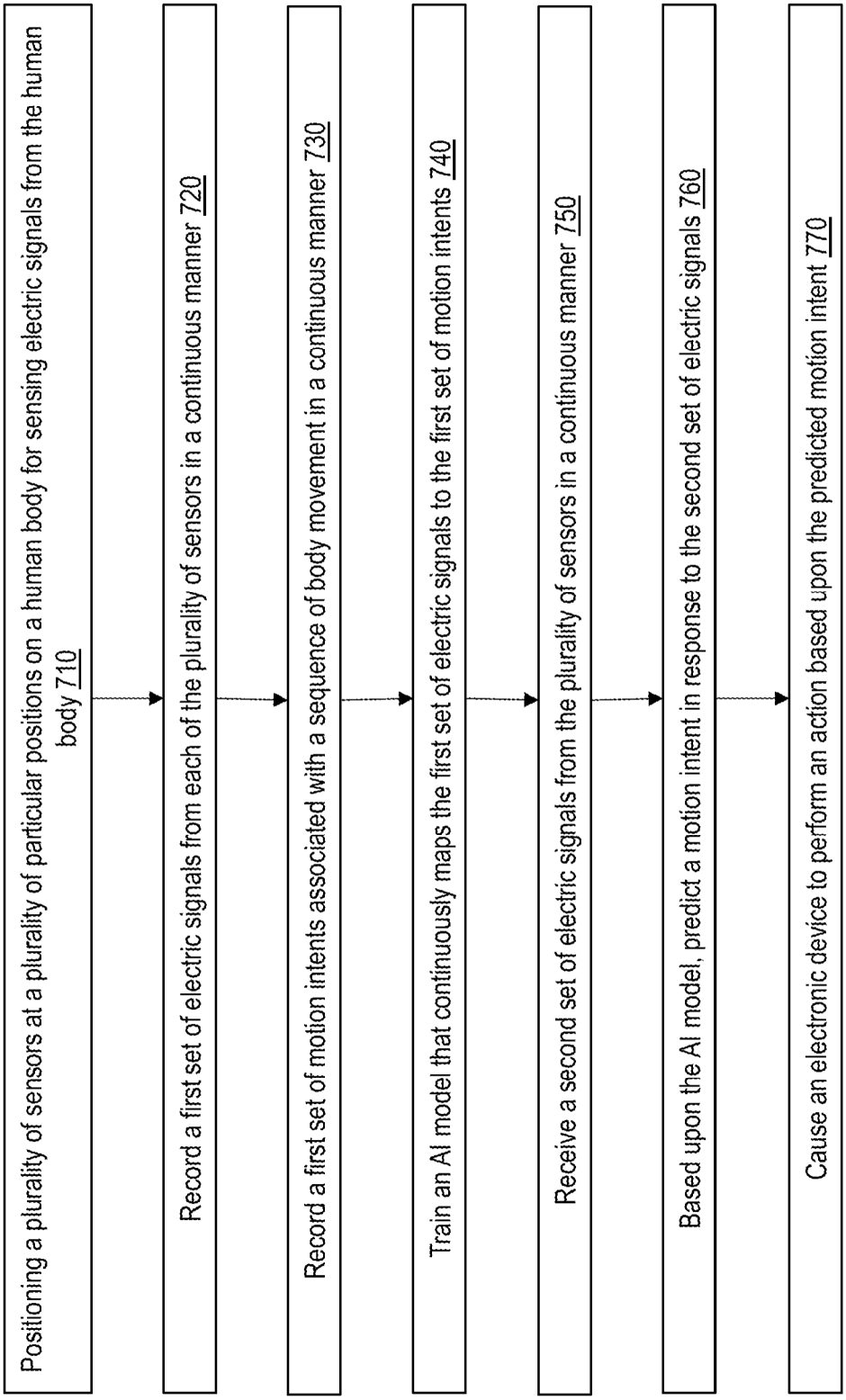

700
Positioning a plurality of sensors at a plurality of particular positions on a human body for sensing electric signals from the human body 710
Record a first set of electric signals from each of the plurality of sensors in a continuous manner 720
Record a first set of motion intents associated with a sequence of body movement in a continuous manner 730
Train an AI model that continuously maps the first set of electric signals to the first set of motion intents 740
Receive a second set of electric signals from the plurality of sensors in a continuous manner 750
Based upon the AI model, predict a motion intent in response to the second set of electric signals 760
Cause an electronic device to perform an action based upon the predicted motion intent 770

FIG. 7