S3. Description of the algorithm used in the orthoses of inserted articles.

Author (s)	ML algorithm (s) used	Type (s) of ML algorithm (s) used	Metrics	Input data	Output data
Delijorge et al., 2020	RF	Classification and regression	Accuracy = - Target epochs: 78.7% - Non-target epochs: 85.7%	Brain activity	F/E of each finger, and the simultaneous F/E of the 5 fingers
Ren et al., 2019	MS-LSTM	Regression	- SVR - σ: 0.52, total MAE: 3.16, validation MAE: 2.69, test MAE: 3.43. - KNR - σ: 0.6, total MAE: 4.84, validation MAE: 4.18, test MAE: 5.24. - LSTM - σ: 0.82, total MAE: 4.17, validation MAE: 3.48, test MAE: 4.58. - MS-LSTM - σ: 0.3, total MAE: 1.44, validation MAE: 1.24, test MAE: 1.55. - MS-LSTM-D - σ: 0.25, total MAE: 0.97, validation MAE: 0.74, test MAE: 1.11. - MS-LSTM-D Fine-tune - σ: 0.2, total MAE: 0.9, validation MAE: - , test MAE: 0.9.	Muscle activity and displacement of movement	Trajectory predictor of shoulder F/E, horizontal abd/add, ext/int rotation, and elbow F/E
Ha, Kim and Jo, 2018	DNN	Regression	RMSE: 4.18 . NRMSE: 7.76% .	Pressure data of the soft glove	Five 3-D points of each finger and the center position of the palm
Wang et al., 2018	ANN	Regression	RMS error: 0.31	Muscle activity	Joint torque
Zeng et al., 2018	Coarse gaussian SVM algorithm with 9 gaussian kernels (specified by Zeng et al. 2017 - Classification of Hand Motions Using Linear Discriminant Analysis and Support Vector Machine)	Classification and regression	Accuracy = 95.5%	Muscle activity	Threshold detection, classification module, and actuator control, realizing the idea that non-paretic hand controls the rehabilitation task of the paretic hand.

Khan A, Khan F, Han, 2016	ELM	Classification and regression	-	DMI, through load cells	Angular position, speed, and the force applied
Agarwal, Fernandez and Deshpande, 2015	NN	Regression	MSE (x10-6) - F - training: 3.64, validation: 3.87, testing: 3.47, overall: 3.65; - E - training: 5.88, validation: 8.9, testing: 4.38, overall: 6.11.	Joint torque	Trajectory predictor of finger F/E
Huang et al., 2015	RLNN	Regression	-	Position and velocity signal	The force and position of each finger and the reward is the error between the predicted and actual output at the current time step becomes smaller than that of the previous time step.
Khan et al., 2015	RBFNN	Regression	-	Muscle activity	Joint torques
Ramirez, Alfaro and Chairez, 2015	NN	Regression	-	Muscle activity	F and E of fingers
Kavya et al., 2015	SVM	Classification and regression	Accuracy = 86.33%	Muscle activity	F and E of hand and elbow in pronation and supination
Chen and Lau, 2015	Divisive hierarchical clustering (unsupervised) and KNN (supervised classification ML)	Mixed of algorithm types	Accuracy of the butterfly curve: 95.96%. Accuracy of the rose shape curve: 91.22%.	-	-

Loconsole et al., 2014	TDNN	Regression	RMSE of torque predictions for the shoulder (2.17Nm) and elbow (1.19Nm)	Muscle activity	Torque at the level joint
Tang et al., 2014	BPN	Regression	Three sEMG-angle models: - 2s: RMSE - 10.70; R² - 0.83; k -1.2; j(º) - -5.03 . - 4s: RMSE - 9.67; R² - 0.87; k - 0.91; j(º) - 4.42 . - 8s: RMSE - 12.42; R² - 0.79; k - 0.88; j(º) - 10.6 .	Muscle activity	Elbow angle
Seki et al., 2011	NN	Regression	-	Voluntary movement and tremor as muscle activity	Recognition of elbow joint movement (ON or OFF)
Zhang and Nakamura, 2006	NN	Regression	-	Eye movement	Human intention of eating

Abbreviations: ANN = Artificial Neural Network; BPN = Back-Propagation Neural Network; DNN = Deep Neural Network; DMI = Desired Motion Intention; E = Extension;ELM = extreme learning machine; F = Flexion; KNN = K-Nearest Neighbor Regression; KNR: K-nearest Neighbor Regression; MAE = Mean Absolute Error; ML: Machine learning; MS-LSTM = Multi-Stream - Long Short-Term Memory; MS-LSTM-D = MS-LSTM Dueling; NN = Neural Network; NRMSE: Normal root mean square error; RBFNN: Radial Basis Function Neural Network; RF = Random Forest; ; RLNN = Reinforcement Learning Neural Network; RMS = Root Mean Square; RMSE:root mean square error; sEMG = Surface Electromyography; SVR = Support Vector Regression; TDNN = Time Delay Neural Network; - = Not informed.