Included papers | Algorithms

				Algorithm 1			Algorithm 2			Algorithm 3			Algorithm 4			Algorithm 5			Algorithm 6		
#	Title	ID	Comparison with other works/algorithms (they will not be mentioned here)	Type	Subtype	Notes	Type	Subtype	Notes	Type	Subtype	Notes	Type	Subtype	Notes	Type	Subtype	Notes	Type	Subtype	Notes
8	An agile approach for human gesture detection using synthetic radar data	Gigie:2019	No	SVM (Support Vector Machine)	Polynomial kernel SVM	cubic svm															
19	Soli: ubiquitous gesture sensing with millimeter wave radar	Lien:2016	No	EL (Ensemble Learning)	RF (Random Forest)																
20	Real-time Arm Gesture Recognition in Smart Home Scenarios via Millimeter Wave Sensing	Liu:2020	Yes	Hybrid	CNN-HMM	3 HMMs for continuous gesture segmentation, CNN for Gesture recognition															
21	DeskWave: Desktop Interactions using Low-cost Microwave Doppler Arrays	McIntosh:2017	No	ANN (Artificial Neural Network)	MLP (Multi-Layer Perceptron)																
24	mm-Wave Radar Based Gesture Recognition: Development and Evaluation of a Low-Power, Low-Complexity System	Patra:2018	No	ANN (Artificial Neural Network)	SOM (Self-Organizing Map)		ANN (Artificial Neural Network)	LVQ (Learning Vector Quantization)													
31	mmASL: Environment-Independent ASL Gesture Recognition Using 60 GHz Millimeter-wave Signals	Santhalingam:2020	Yes	ANN (Artificial Neural Network)	CNN (Convolutional Neural Network)		EL (Ensemble Learning)	RF (Random Forest)		SVM (Support Vector Machine)	Unspecified										
40	Interacting with Soli: Exploring Fine-Grained Dynamic Gesture Recognition in the Radio-Frequency Spectrum	Wang:2016	Yes	Hybrid	CNN-LSTM																
49	Application of FMCW Radar for Dynamic Continuous Hand Gesture Recognition	Zhang:2018	No	Hybrid	CNN-LSTM	3D-CNN-LSTM and 3D-CNN-LSTM-CTC															
55	The Missing Interface: Micro-Gestures on Augmented Objects	Čopič Pucihar:2019	No	EL (Ensemble Learning)	RF (Random Forest)	Forest size = 200, depth = 10	SVM (Support Vector Machine)	Radial Basis Function (RBF) kernel SVM													
144	Fabriccio: Touchless Gestural Input on Interactive Fabrics	Wu:2020	No	EL (Ensemble Learning)	RF (Random Forest)	Forest size = 100, depth = 30															
314	RadSense: Enabling one hand and no hands interaction for sterile manipulation of medical images using Doppler radar	Miller:2020	Yes	NN (Nearest Neighbor)	k-NN	k=10															
318	Intelligent Electromagnetic Sensing with Learnable Data Acquisition and Processing	Li:2020	No	ANN (Artificial Neural Network)	Unspecified																
380	Dynamic Hand Gesture Recognition Based on Micro-Doppler Radar Signatures Using Hidden Gauss-Markov Models	Wang:2020	Yes	HMM (Hidden Markov Model)	Gaussian HMM																
383	Range-gating technology for millimeter-wave radar remote gesture control in IoT applications	Nguyen:2018	No	Other	Threshold-Based																
424	Spectrum-Based Hand Gesture Recognition Using Millimeter-Wave Radar Parameter Measurements	Liu:2019	Yes	DT (Decision Tree)	Unspecified																
442	Pulsed Millimeter Wave Radar for Hand Gesture Sensing and Classification	Fhager:2019	No	ANN (Artificial Neural Network)	CNN (Convolutional Neural Network)	Transfer learning applied to a pre-trained neural network (ResNet-50)															
461	Radar-based hand gesture recognition using I-Q echo plot and convolutional neural network	Sakamoto:2017	No	ANN (Artificial Neural Network)	CNN (Convolutional Neural Network)																
470	Hidden Markov model-based gesture recognition with FMCW radar	Malysa:2016	No	HMM (Hidden Markov Model)	Unspecified																
471	Privacy-Preserving Gesture Recognition with Explainable Type-2 Fuzzy Logic Based Systems	Rožman:2020	Yes	Other	FLS (Fuzzy Logic System)	w/ Big Bang-Big Crunch algorithm															
480	Character Recognition in Air-Writing Based on Network of Radars for Human-Machine Interface	Arsalan:2019	No	ANN (Artificial Neural Network)	RNN (Recurrent Neural Network)	LSTM-CTC, BLSTM-CTC, ConvLSTM-CTC	ANN (Artificial Neural Network)	CNN (Convolutional Neural Network)	Deep CNN												
500	Low Power Embedded Gesture Recognition Using Novel Short-Range Radar Sensors	Eggimann:2019	Yes	ANN (Artificial Neural Network)	CNN (Convolutional Neural Network)	Combination of CNN and TCN (Temporal CNN)															
505	Dynamic Hand Gesture Recognition Using FMCW Radar Sensor for Driving Assistance	zhang:2018	No	ANN (Artificial Neural Network)	CNN (Convolutional Neural Network)																
513	Mining Spatio-Temporal Features from mmW Radar echoes for Hand Gesture Recognition	Kang:2019	No	ANN (Artificial Neural Network)	CNN (Convolutional Neural Network)																
529	Radar Gesture Recognition System in Presence of Interference using Self-Attention Neural Network	Hazra:2019	No	Hybrid	CNN-LSTM	2D-DCNN-LSTM															
533	Design of Gesture Recognition System Based on 77GHz Millimeter Wave Radar	Du:2019	No	ANN (Artificial Neural Network)	CNN (Convolutional Neural Network)																
540	Real-Time Radar-Based Gesture Detection and Recognition Built in an Edge-Computing Platform	Sun:2020	Yes	ANN (Artificial Neural Network)	CNN (Convolutional Neural Network)																
541	A Time Domain Artificial Intelligence Radar System Using 33-GHz Direct Sampling for Hand Gesture Recognition	Park:2020	No	ANN (Artificial Neural Network)	RNN (Recurrent Neural Network)	LSTM for dynamic gestures	ANN (Artificial Neural Network)	CNN (Convolutional Neural Network)	1D-CNN for static gestures												
561	u-DeepHand: FMCW Radar-Based Unsupervised Hand Gesture Feature Learning Using Deep Convolutional Auto-Encoder Network	Zhang:2019	Yes	ANN (Artificial Neural Network)	AE (Autoencoder)	Convolutional AE															
564	Riddle: Real-Time Interacting with Hand Description via Millimeter-Wave Sensor	Zhang:2018	Yes	Hybrid	CNN-LSTM	3D-CNN-LSTM-CTC															
567	Dop-NET: a micro-Doppler radar data challenge	Ritchie:2020	No	DT (Decision Tree)	Unspecified	Fine Trees	NN (Nearest Neighbor)	k-NN	k unknown	Other	LDA (Linear Discriminant Analysis)		Other	QDA (Quadratic Discriminant Analysis)		SVM (Support Vector Machine)	Linear kernel SVM		SVM (Support Vector Machine)	Polynomial kernel SVM	Quadratic kernel
579	In-Air Continuous Writing Using UWB Impulse Radar Sensors	Khan:2020	Yes	ANN (Artificial Neural Network)	CNN (Convolutional Neural Network)																

587	Deep-Learning for Hand-Gesture Recognition with Simultaneous Thermal and Radar Sensors	Skaria:2020	No	Hybrid	CNN-LSTM																
594	Dynamic hand gesture classification based on radar micro-Doppler signatures	Zhang:2016	No	SVM (Support Vector Machine)	Unspecified																
615	Hand Gesture Recognition Using a Radar Echo I–Q Plot and a Convolutional Neural Network	Sakamoto:2018	Yes	ANN (Artificial Neural Network)	CNN (Convolutional Neural Network)																
616	Hand gesture classification using 24 GHz FMCW dual polarised radar	Ritchie:2017	No	NN (Nearest Neighbor)	k-NN	k=5, w/ Euclidean distance															
620	ASL Recognition Based on Kinematics Derived from a Multi-Frequency RF Sensor Network	Gurbuz:2020	No	EL (Ensemble Learning)	RF (Random Forest)		SVM (Support Vector Machine)	Unspecified		NN (Nearest Neighbor)	k-NN		Other	LDA (Linear Discriminant Analysis)	w/ random subspace gradient boosting						
622	Temporal-Range-Doppler Features Interpretation and Recognition of Hand Gestures Using mmW FMCW Radar Sensors	Zhang:2020	Yes	ANN (Artificial Neural Network)	CNN (Convolutional Neural Network)	3D-CNN	Hybrid	CNN-LSTM	CNN-LSTM												
626	24 GHz FMCW Radar System for Real-Time Hand Gesture Recognition Using LSTM	Suh:2018	No	ANN (Artificial Neural Network)	RNN (Recurrent Neural Network)	LSTM															
636	Deep-Learning Methods for Hand-Gesture Recognition Using Ultra-Wideband Radar	Skaria:2020	No	Hybrid	CNN-FCNN	3D-CNN-FCNN	Hybrid	CNN-NN	3D-CNN-kNN	Hybrid	CNN-SVM	3D-CNN-SVM	Hybrid	CNN-LSTM	2D-CNN-LSTM						
642	RaCon: A gesture recognition approach via Doppler radar for intelligent human-robot interaction	Zhang:2020	Yes	NN (Nearest Neighbor)	k-NN	R-DTW															
647	Enhanced Hand Gesture Recognition using Continuous Wave Interferometric Radar	Liang:2020	No	SVM (Support Vector Machine)	Linear kernel SVM																
649	Doppler Radar for Dynamic Hand Gesture Recognition based on Signal Image Processing	Arthamanolap:2019	No	ANN (Artificial Neural Network)	CNN (Convolutional Neural Network)	Deep CNN															
653	Sign Language Gesture Recognition Using Doppler Radar and Deep Learning	Kulhandjian:2019	No	ANN (Artificial Neural Network)	CNN (Convolutional Neural Network)	Deep CNN, VGG-16															
654	Sparsity aware dynamic gesture recognition using radar sensors with angular diversity	Yang:2018	Yes	NN (Nearest Neighbor)	1-NN	w/ Modified-Hausdorff distance,															
679	Dynamic Hand Gesture Classification Based on Multistatic Radar Micro-Doppler Signatures Using Convolutional Neural Network	Chen:2019	No	ANN (Artificial Neural Network)	CNN (Convolutional Neural Network)																
683	Effect of sparsity-aware time–frequency analysis on dynamic hand gesture classification with radar micro-Doppler signatures	Li:2018	No	SVM (Support Vector Machine)	Linear kernel SVM	Tree of five SVMs															
687	Hand Gesture Recognition using a Three-dimensional 24 GHz Radar Array	Lan:2018	No	DT (Decision Tree)	Unspecified																
689	A Novel Detection and Recognition Method for Continuous Hand Gesture Using FMCW Radar	Wang:2020	Yes	NN (Nearest Neighbor)	1-NN	"Fusion" DTW, method proposed in the paper															
694	mmWave Radar-based Hand Gesture Recognition using Range-Angle Image	Yu:2020	No	Hybrid	CNN-LSTM	Data fusion of Range-Angle image and Range-Doppler image															
706	Multidimensional Feature Representation and Learning for Robust Hand-Gesture Recognition on Commercial Millimeter-Wave Radar	Xia:2020	No	ANN (Artificial Neural Network)	CNN (Convolutional Neural Network)																
710	Two-Stream Time Sequential Network Based Hand Gesture Recognition Method Using Radar Sensor	Wang:2019	Yes	Hybrid	CNN-LSTM	(I3D+CNN)-LSTM															
713	Arm Motion Classification Using Curve Matching of Maximum Instantaneous Doppler Frequency Signatures	Amin:2020	No	NN (Nearest Neighbor)	Unspecified	w/ DTW (proposed in this paper), Manhattan distance (L1), Euclidean distance (L2) (as comparison)															
720	Implementation of C4.5 decision tree in Human Gesture Recognition based on Doppler radars	Zhang:2019	No	DT (Decision Tree)	C4.5	C4.5 algorithm															
731	Hand Gesture Recognition based on Radar Micro-Doppler Signature Envelopes	Amin:2019	No	NN (Nearest Neighbor)	k-NN	w/ Manhattan distance, Euclidean distance, Earth Mover's distance, Modified Hausdorff distance	SVM (Support Vector Machine)	Unspecified													
732	Radar and ultrasound hybrid system for human computer interaction	Nguyen:2018	No	Other	Threshold-Based	Based on thresholds and time															
743	GestureVLAD: Combining Unsupervised Features Representation and Spatio-Temporal Aggregation for Doppler-Radar Gesture Recognition	Berenguer:2019	Yes	ANN (Artificial Neural Network)	CNN (Convolutional Neural Network)	UFR-NetVLAD and UFR-CNN-NetVLAD															
749	Gesture Recognition Using mm-Wave Sensor for Human-Car Interface	Smith:2018	No	EL (Ensemble Learning)	RF (Random Forest)																
750	Gesture recognition for smart home applications using portable radar sensors	Wan:2014	No	NN (Nearest Neighbor)	k-NN	w/ Euclidean distance, k=3, using features extracted with PCA, magnitude difference features, and doppler patterns features															
751	A Gesture Air-Writing Tracking Method that Uses 24 GHz SIMO Radar SoC	Wang:2020	Yes	ANN (Artificial Neural Network)	RNN (Recurrent Neural Network)	LSTM															
756	Deformable deep convolutional generative adversarial network in microwave based hand gesture recognition system	Zhang:2017	Yes	ANN (Artificial Neural Network)	GAN (Generative Adversarial Network)	DCGAN															
765	Human Motion Training Data Generation for Radar Based Deep Learning Applications	Ishak:2018	No	ANN (Artificial Neural Network)	Unspecified																

767	Hand Pointing Gestures Based Digital Menu Board Implementation Using IR-UWB Transceivers	Ghaffar:2019	No	SVM (Support Vector Machine)	Unspecified																
792	A Hand Gesture Recognition Sensor Using Reflected Impulses	Kim:2017	Yes	ANN (Artificial Neural Network)	CNN (Convolutional Neural Network)	1D-CNN															
799	Exploring gesture recognition with low-cost CW radar modules in comparison to FMCW architectures	Bannon:2020	No	Other	LDA (Linear Discriminant Analysis)		Other	QDA (Quadratic Discriminant Analysis)		EL (Ensemble Learning)	BT (Bagging Trees)		SVM (Support Vector Machine)	Polynomial kernel SVM	Quadratic kernel						
805	A Dynamic Continuous Hand Gesture Detection and Recognition Method with FMCW Radar	Ren:2020	Yes	NN (Nearest Neighbor)	1-NN	1NN that fuses the results from 2 DTW, each using different features (Range-time map and doppler-time map). The distance between 2 gestures is the sum of matching distances of each DTW.															
810	Short-Range Radar-Based Gesture Recognition System Using 3D CNN With Triplet Loss	Hazra:2019	Yes	Hybrid	CNN-NN	3D-CNN for feature extraction + 1-NN for classification															
817	Performance Investigation of Machine Learning Algorithms for Simple Human Gesture Recognition Employing an Ultra Low Cost Radar System	Ehrnsperger:2019	No	BN (Bayesian Networks)	NB (Naive Bayes)		SVM (Support Vector Machine)	Unspecified		Other	SGD (Stochastic Gradient Descent)		DT (Decision Tree)	Unspecified		Other	THD (Threshold Detection)				
827	Remote Authentication Using an Ultra-Wideband Radio Frequency Transceiver	Leem:2020	No	Hybrid	CNN-SVM	AlexNet-based CNN for feature extraction + one-class SVM with Gaussian kernel for classification															
831	Sparsity-Driven Micro-Doppler Feature Extraction for Dynamic Hand Gesture Recognition	Li:2018	Yes	NN (Nearest Neighbor)	1-NN	w/ Modified-Hausdorff distance															
833	Novel bispectrum-based wireless vision technique using disturbance of electromagnetic field by human gestures	Viunytskyi:2017	No	NN (Nearest Neighbor)	1-NN	Gestures are classified according to the maximum value of the cross correlation coefficient															
841	Multi-sensor system for driver's hand-gesture recognition	Molchanov:2015	Yes	ANN (Artificial Neural Network)	CNN (Convolutional Neural Network)	Deep CNN															
844	Hand Gesture Recognition with Ensemble Time-Frequency Signatures Using Enhanced Deep Convolutional Neural Network	Feng:2019	No	ANN (Artificial Neural Network)	CNN (Convolutional Neural Network)	Enhanced Deep CNN															
856	AI-driven Event Recognition with a Real-Time 3D 60-GHz Radar System	Tzadok:2020	No	ANN (Artificial Neural Network)	CNN (Convolutional Neural Network)	Deep Neural Network (DNN) consisting of four 3D-CNNs and one 1D-CNN															
858	Latern: Dynamic Continuous Hand Gesture Recognition Using FMCW Radar Sensor	Zhang:2018	Yes	Hybrid	CNN-LSTM	3D-CNN-LSTM + CTC															
871	Robust Doppler-Based Gesture Recognition With Incoherent Automotive Radar Sensor Networks	Kern:2020	No	ANN (Artificial Neural Network)	CNN (Convolutional Neural Network)	Based on VGG-16 architecture															
884	Real-Time Multi-Gesture Recognition using 77 GHz FMCW MIMO Single Chip Radar	Goswami:2019	No	ANN (Artificial Neural Network)	Unspecified																
890	Gesture recognition with a low power FMCW radar and a deep convolutional neural network	Dekker:2017	No	ANN (Artificial Neural Network)	CNN (Convolutional Neural Network)																
905	Enhanced Multi-Channel Feature Synthesis for Hand Gesture Recognition Based on CNN With a Channel and Spatial Attention Mechanism	Du:2020	Yes	ANN (Artificial Neural Network)	CNN (Convolutional Neural Network)																
913	Hierarchical Sensor Fusion for Micro-Gesture Recognition With Pressure Sensor Array and Radar	Li:2020	No	SVM (Support Vector Machine)	Polynomial kernel SVM	Quadratic kernel															
916	Interference Suppression Based Gesture Recognition Method with FMCW Radar	Zhao:2019	Yes	Hybrid	CNN-LSTM	TS-I3D (Time Sequential Inflated 3 Dimensions)															
943	Fine-Grained Gesture Recognition Based on High Resolution Range Profiles of Terahertz Radar	Wang:2019	Yes	EL (Ensemble Learning)	RF (Random Forest)																
960	Multi-Feature Encoder for Radar-Based Gesture Recognition	Sun:2020	Yes	ANN (Artificial Neural Network)	CNN (Convolutional Neural Network)	2D-CNN + multi-feature encoder															
961	Gesture Classification with Handcrafted Micro-Doppler Features using a FMCW Radar	Sun:2018	No	NN (Nearest Neighbor)	k-NN	k=10, algorithm from scikit-learn library															
966	Negative Latency Recognition Method for Fine-Grained Gestures Based on Terahertz Radar	Wang:2020	Yes	ANN (Artificial Neural Network)	CNN (Convolutional Neural Network)	Pattern model, to classify gestures into coarse, "parent" classes. Composed of CNN + SENet (squeeze-and-excitation network -> special kind of CNN)	Other	Threshold-Based	Intention model, to classify into child-class gestures, based on comparison of distance between start and end point											
970	A hand gesture recognition system based on 24GHz radars	Lan:2017	No	DT (Decision Tree)	C4.5																
972	Hand Gesture Recognition Using Convolutional Neural Networks	Lan:2018	No	ANN (Artificial Neural Network)	CNN (Convolutional Neural Network)																
977	Short-Range Radar Based Real-Time Hand Gesture Recognition Using LSTM Encoder	Choi:2019	Yes	ANN (Artificial Neural Network)	RNN (Recurrent Neural Network)	LSTM															
987	Application of Doppler radar for the recognition of hand gestures using optimized deep convolutional neural networks	Kim:2017	No	ANN (Artificial Neural Network)	CNN (Convolutional Neural Network)	Deep CNN															
1001	Real-Time Gesture Recognition with Shallow Convolutional Neural Networks Employing an Ultra Low Cost Radar System	Ehrnsperger:2020	No	ANN (Artificial Neural Network)	CNN (Convolutional Neural Network)	Shallow CNN															

1003	Automatic Radar-based Gesture Detection and Classification via a Region-based Deep Convolutional Neural Network	Sun:2019	No	ANN (Artificial Neural Network)	CNN (Convolutional Neural Network)	R-DCNN (region-based deep CNN)															
1005	Automatic Arm Motion Recognition Based on Radar Micro-Doppler Signature Envelopes	Zeng:2020	Yes	NN (Nearest Neighbor)	Unspecified	w/ 4 distance metrics: manhattan distance (L1), PCA, CNN, empirical feature extraction, sparse reconstruction															
1029	Expressive ASL Recognition using Millimeter-wave Wireless Signals	Santhalingam:2020	No	Hybrid	CNN-LSTM	2 or 3 2D-CNNS + LSTMs															
1056	TS-I3D Based Hand Gesture Recognition Method With Radar Sensor	Wang:2019	Yes	Hybrid	CNN-LSTM	Time Sequential Inflated 3D-CNN, based on GoogLeNet															
1067	SmartFinger: A Finger-Sensing System for Mobile Interaction via MIMO FMCW Radar	Zhang:2019	Yes	Hybrid	CNN-LSTM	2 3D-CNNs (feature extraction) + 1 LSTM															
1071	Automatic Arm Motion Recognition Using Radar for Smart Home Technologies	Amin:2019	No	NN (Nearest Neighbor)	1-NN	w/ Euclidean distance (L2), Manhattan distance (L1), Earth Mover's distance, and modified-Hausdorff distance															
1084	Hand Gesture Recognition Using Micro-Doppler Signatures With Convolutional Neural Network	Kim:2016	No	ANN (Artificial Neural Network)	CNN (Convolutional Neural Network)	Deep CNN															
1089	Gesture-Radar: Enabling Natural Human-Computer Interactions with Radar-Based Adaptive and Robust Arm Gesture Recognition	Lou:2018	No	NN (Nearest Neighbor)	k-NN	k=7, RDTW															
1094	IR-UWB Radar Sensor for Human Gesture Recognition by Using Machine Learning	Park:2016	No	ANN (Artificial Neural Network)	Unspecified																
1096	Feature-Based Hand Gesture Recognition Using an FMCW Radar and its Temporal Feature Analysis	Ryu:2018	Yes	NN (Nearest Neighbor)	1-NN	Multidimensional DTW															
1097	Robust Gesture Recognition Using Millimetric-Wave Radar System	Hazra:2018	Yes	Hybrid	CNN-LSTM	Feature extraction with an All-CNN + LSTM layer for temporal sequence modeling															
1099	Detecting Mid-Air Gestures for Digit Writing With Radio Sensors and a CNN	Leem:2020	No	ANN (Artificial Neural Network)	CNN (Convolutional Neural Network)																
1105	Sparsity-based dynamic hand gesture recognition using micro-Doppler signatures	Li:2017	No	BN (Bayesian Networks)	NB (Naive Bayes)	w/ kernel function estimators	NN (Nearest Neighbor)	1-NN		NN (Nearest Neighbor)	k-NN	k=3	SVM (Support Vector Machine)	Unspecified							
1116	Hand-Gesture Recognition Using Two-Antenna Doppler Radar With Deep Convolutional Neural Networks	Skaria:2019	No	ANN (Artificial Neural Network)	CNN (Convolutional Neural Network)	Deep CNN															
1180	Hand-Based Gesture Recognition for Vehicular Applications Using IR-UWB Radar	Khan:2017	No	Other	KMC (K-Means Clustering)																
1181	Dynamic Gesture Recognition with a Terahertz Radar Based on Range Profile Sequences and Doppler Signatures	Zhou:2018	Yes	NN (Nearest Neighbor)	Unspecified	w/ DTW + euclidean distance vs. cosine correlation coefficient distance															
1194	Finger-Counting-Based Gesture Recognition within Cars Using Impulse Radar with Convolutional Neural Network	Ahmed:2019	No	ANN (Artificial Neural Network)	CNN (Convolutional Neural Network)																
1205	Hand Gesture Recognition Using an IR-UWB Radar with an Inception Module-Based Classifier	Ahmed:2020	Yes	ANN (Artificial Neural Network)	CNN (Convolutional Neural Network)	3D-CNN, derived from GoogLeNet															
1206	Arm Motion Classification Using Time-Series Analysis of the Spectrogram Frequency Envelopes	Zeng:2020	No	NN (Nearest Neighbor)	1-NN	DTW, L1 distance	ANN (Artificial Neural Network)	RNN (Recurrent Neural Network)	LSTM												
1211	A Frame Detection Method for Real-Time Hand Gesture Recognition Systems Using CW-Radar	Yu:2020	No	ANN (Artificial Neural Network)	CNN (Convolutional Neural Network)																
1220	Improving Classification Accuracy of Hand Gesture Recognition Based on 60 GHz FMCW Radar with Deep Learning Domain Adaptation	Lee:2020	Yes	ANN (Artificial Neural Network)	CNN (Convolutional Neural Network)	3D-CNN															
1222	Two Dimensional Parameters Based Hand Gesture Recognition Algorithm for FMCW Radar Systems	Wang:2019	No	ANN (Artificial Neural Network)	CNN (Convolutional Neural Network)	VGG-16 architecture															
1224	Doppler-Radar Based Hand Gesture Recognition System Using Convolutional Neural Networks	Zhang:2019	No	ANN (Artificial Neural Network)	CNN (Convolutional Neural Network)																
1225	Long-Range Gesture Recognition Using Millimeter Wave Radar	Liu:2020	No	ANN (Artificial Neural Network)	CNN (Convolutional Neural Network)	Multi-branch CNN															
1230	Enabling non-invasive and real-time human-machine interactions based on wireless sensing and fog computing	Wang:2019	No	NN (Nearest Neighbor)	k-NN	RDTW, k=7															
1231	GigaHertz: Gesture Sensing Using Microwave Radar and IR Sensor with Machine Learning Algorithms	Ahmad:2021	Yes	SVM (Support Vector Machine)	Linear kernel SVM																
1241	Human motion recognition using ultra-wideband radar and cameras on mobile robot	Li:2009	Yes	HMM (Hidden Markov Model)	Unspecified																

1244	A novel F-RCNN based hand gesture detection approach for FMCW systems	Wang:2019	Yes	Hybrid	CNN-GAN	F-RCNN (Faster Region-based Convolutional Neural Network) for classification, 3-DCGAN (3D Deep Convolutional Generative Adversarial Network) for dataset expansion														
1267	Indoor human activity recognition using high-dimensional sensors and deep neural networks	Vandersmissen:202(	No	ANN (Artificial Neural Network)	RNN (Recurrent Neural Network)	LSTM	Hybrid	CNN-LSTM	1D-CNN-LSTM, 2D-CNN-LSTM	ANN (Artificial Neural Network)	CNN (Convolutional Neural Network)	2D-CNN, 3D-CNN								