Takuya Isomura

List of Publications by Year
in descending order

35 papers	508 citations	933447 10 h-index	752698 20 g-index
44 all docs	44 docs citations	44 times ranked	387 citing authors

#	Article	IF	Citations
1	Learning with three factors: modulating Hebbian plasticity with errors. Current Opinion in Neurobiology, 2017, 46, 170-177.	4.2	92
2	Axonal conduction slowing induced by spontaneous bursting activity in cortical neurons cultured in a microtunnel device. Integrative Biology (United Kingdom), 2015, 7, 64-72.	1.3	50
3	Cultured Cortical Neurons Can Perform Blind Source Separation According to the Free-Energy Principle. PLoS Computational Biology, 2015, 11, e1004643.	3.2	44
4	A Local Learning Rule for Independent Component Analysis. Scientific Reports, 2016, 6, 28073.	3.3	39
5	In vitro neural networks minimise variational free energy. Scientific Reports, 2018, 8, 16926.	3.3	35
6	The emergence of synchrony in networks of mutually inferring neurons. Scientific Reports, 2019, 9, 6412.	3.3	35
7	Bayesian Filtering with Multiple Internal Models: Toward a Theory of Social Intelligence. Neural Computation, 2019, 31, 2390-2431.	2.2	25
8	Zebrafish capable of generating future state prediction error show improved active avoidance behavior in virtual reality. Nature Communications, 2021, 12, 5712.	12.8	23
9	Error-Gated Hebbian Rule: A Local Learning Rule for Principal and Independent Component Analysis. Scientific Reports, 2018, 8, 1835.	3.3	21
10	Active inference leads to Bayesian neurophysiology. Neuroscience Research, 2022, 175, 38-45.	1.9	18
11	Canonical neural networks perform active inference. Communications Biology, 2022, 5, 55.	4.4	15
12	Signal transfer within a cultured asymmetric cortical neuron circuit. Journal of Neural Engineering, 2015, 12, 066023.	3.5	9
13	Reverse-Engineering Neural Networks to Characterize Their Cost Functions. Neural Computation, 2020, 32, 2085-2121.	2.2	9
14	Linking Neuromodulated Spike-Timing Dependent Plasticity with the Free-Energy Principle. Neural Computation, 2016, 28, 1859-1888.	2.2	8
15	Temporal relation between neural activity and neurite pruning on a numerical model and a microchannel device with micro electrode array. Biochemical and Biophysical Research Communications, 2017, 486, 539-544.	2.1	8
16	Spike-contrast: A novel time scale independent and multivariate measure of spike train synchrony. Journal of Neuroscience Methods, 2018, 293, 136-143.	2.5	8
17	A Measure of Information Available for Inference. Entropy, 2018, 20, 512.	2.2	7
18	Dimensionality reduction to maximize prediction generalization capability. Nature Machine Intelligence, 2021, 3, 434-446.	16.0	7

#	Article	IF	Citations
19	Neurogenesis Enhances Response Specificity to Spatial Pattern Stimulation in Hippocampal Cultures. IEEE Transactions on Biomedical Engineering, 2017, 64, 2555-2561.	4.2	6
20	Task-Related Synaptic Changes Localized to Small Neuronal Population in Recurrent Neural Network Cortical Models. Frontiers in Computational Neuroscience, 2018, 12, 83.	2.1	6
21	Multi-context blind source separation by error-gated Hebbian rule. Scientific Reports, 2019, 9, 7127.	3.3	6
22	On the Achievability of Blind Source Separation for High-Dimensional Nonlinear Source Mixtures. Neural Computation, 2021, 33, 1433-1468.	2.2	6
23	Accurate Connection Strength Estimation Based on Variational Bayes for Detecting Synaptic Plasticity. Neural Computation, 2015, 27, 819-844.	2.2	4
24	Suppression of Macroscopic Oscillations in Mixed Populations of Active and Inactive Oscillators Coupled through Lattice Laplacian. Journal of the Physical Society of Japan, 2019, 88, 054004.	1.6	2
25	Inferring Neuronal Couplings From Spiking Data Using a Systematic Procedure With a Statistical Criterion. Neural Computation, 2020, 32, 2187-2211.	2.2	2
26	Connection-strength Estimation of Neuronal Networks by Fitting for Izhikevich Model. IEEJ Transactions on Electronics, Information and Systems, 2012, 132, 1581-1588.	0.2	2
27	Connectionâ€Strength Estimation of Neuronal Networks by Fitting for Izhikevich Model. Electrical Engineering in Japan (English Translation of Denki Gakkai Ronbunshi), 2014, 187, 42-50.	0.4	1
28	Improvement in Pattern Separation by Regulating Neurogenesis in Hippocampal Culture. Electronics and Communications in Japan, 2017, 100, 3-12.	0.5	1
29	Objective and efficient inference for couplings in neuronal network. Journal of Statistical Mechanics: Theory and Experiment, 2019, 2019, 124010.	2.3	1
30	Basic Research for Development of a Multimodal AR-BCI. IEEJ Transactions on Electronics, Information and Systems, 2016, 136, 1291-1297.	0.2	1
31	Neuron Type Sorting Based on Connection-strength Estimation. IEEJ Transactions on Electronics, Information and Systems, 2013, 133, 1806-1813.	0.2	0
32	Serotonergic Modulation of Activity Pattern on Neuronal Network. IEEJ Transactions on Electronics, Information and Systems, 2013, 133, 1814-1819.	0.2	0
33	Improvement in Pattern Separation by Regulating Neurogenesis in Hippocampal Culture. IEEJ Transactions on Electronics, Information and Systems, 2015, 135, 805-812.	0.2	0
34	Neuronal Maximum a Posteriori Estimation on Microelectrode Arrays. Frontiers in Neuroscience, 0, 10, .	2.8	0
35	Introduction of the Free-Energy Principle: Perception, Action, and Inference of Another's Mind. The Brain & Neural Networks, 2018, 25, 71-85.	0.1	0