# ShiNung Ching

List of Publications by Year
in descending order



| 61 | 1,147 | 759233 12 | 434195 31 |
|---|---|---|---|
| papers | citations | h-index | g-index |

| 66 | 66 | 66 | 1200 |
|---|---|---|---|
| all docs | docs citations | times ranked | citing authors |

| # | Article | IF | Citations |
|---|---|---|---|
| 1 | Thalamocortical model for a propofol-induced Î±-rhythm associated with loss of consciousness. Proceedings of the National Academy of Sciences of the United States of America, 2010, 107, 22665-22670. | 7.1 | 331 |
| 2 | A neurophysiologicalâ€“metabolic model for burst suppression. Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, 3095-3100. | 7.1 | 241 |
| 3 | Modeling the dynamical effects of anesthesia on brain circuits. Current Opinion in Neurobiology, 2014, 25, 116-122. | 4.2 | 94 |
| 4 | Propofol and sevoflurane induce distinct burst suppression patterns in rats. Frontiers in Systems Neuroscience, 2014, 8, 237. | 2.5 | 53 |
| 5 | Real-time Closed-loop Control in a Rodent Model of Medically Induced Coma Using Burst Suppression. Anesthesiology, 2013, 119, 848-860. | 2.5 | 51 |
| 6 | Distributed control in a mean-field cortical network model: Implications for seizure suppression. Physical Review E, 2012, 86, 021920. | 2.1 | 41 |
| 7 | Control strategies for underactuated neural ensembles driven by optogenetic stimulation. Frontiers in Neural Circuits, 2013, 7, 54. | 2.8 | 35 |
| 8 | The human burst suppression electroencephalogram of deep hypothermia. Clinical Neurophysiology, 2015, 126, 1901-1914. | 1.5 | 33 |
| 9 | Estimation and validation of individualized dynamic brain models with resting state fMRI. NeuroImage, 2020, 221, 117046. | 4.2 | 32 |
| 10 | Sevoflurane Alters Spatiotemporal Functional Connectivity Motifs That Link Resting-State Networks during Wakefulness. Frontiers in Neural Circuits, 2016, 10, 107. | 2.8 | 21 |
| 11 | Inferring evoked brain connectivity through adaptive perturbation. Journal of Computational Neuroscience, 2013, 34, 303-318. | 1.0 | 17 |
| 12 | High-energy brain dynamics during anesthesia-induced unconsciousness. Network Neuroscience, 2017, 1, 431-445. | 2.6 | 15 |
| 13 | Real-time segmentation and tracking of brain metabolic state in ICU EEG recordings of burst suppression. , 2013, 2013, 7108-11. | | 12 |
| 14 | Neurocontrol: Methods, models and technologies for manipulating dynamics in the brain. , 2015, , . | | 12 |
| 15 | Homeostatic dynamics, hysteresis and synchronization in a low-dimensional model of burst suppression. Journal of Mathematical Biology, 2017, 74, 1011-1035. | 1.9 | 12 |
| 16 | Relating observability and compressed sensing of time-varying signals in recurrent linear networks. Neural Networks, 2016, 83, 11-20. | 5.9 | 11 |
| 17 | Intrinsic network reactivity differentiates levels of consciousness in comatose patients. Clinical Neurophysiology, 2018, 129, 2296-2305. | 1.5 | 11 |
| 18 | EEG dynamical correlates of focal and diffuse causes of coma. BMC Neurology, 2017, 17, 197. | 1.8 | 9 |

| # | Article | IF | Citations |
|---|---|---|---|
| 19 | Slow manifolds within network dynamics encode working memory efficiently and robustly. PLoS Computational Biology, 2021, 17, e1009366. | 3.2 | 9 |
| 20 | Fundamental Limits of Forced Asynchronous Spiking with Integrate and Fire Dynamics. Journal of Mathematical Neuroscience, 2017, 7, 11. | 2.4 | 8 |
| 21 | Control Analysis and Design for Statistical Models of Spiking Networks. IEEE Transactions on Control of Network Systems, 2018, 5, 1146-1156. | 3.7 | 8 |
| 22 | Dimensionality reduction impedes the extraction of dynamic functional connectivity states from fMRI recordings of resting wakefulness. Journal of Neuroscience Methods, 2018, 293, 151-161. | 2.5 | 6 |
| 23 | Macroperiodic Oscillations Are Associated With Seizures Following Acquired Brain Injury in Young Children. Journal of Clinical Neurophysiology, 2021, Publish Ahead of Print, . | 1.7 | 6 |
| 24 | Controlling linear networks with minimally novel inputs. , 2015, , . | | 5 |
| 25 | Controlling point process generalized linear models of neural spiking. , 2016, , . | | 5 |
| 26 | Quasilinearization-based controllability analysis of neuronal rate networks. , 2016, , . | | 5 |
| 27 | Resolving and characterizing the incidence of millihertz EEG modulation in critically ill children. Clinical Neurophysiology, 2022, 137, 84-91. | 1.5 | 5 |
| 28 | Non-Stationary Representation Learning in Sequential Linear Bandits. , 2022, 1, 41-56. | | 5 |
| 29 | Voltage-based automated detection of postictal generalized electroencephalographic suppression: Algorithm development and validation. Clinical Neurophysiology, 2020, 131, 2817-2825. | 1.5 | 4 |
| 30 | Selective spiking in neuronal populations. , 2017, , . | | 3 |
| 31 | A Learning Framework for Controlling Spiking Neural Networks. , 2019, , . | | 3 |
| 32 | Postictal generalized electroencephalographic suppression following electroconvulsive therapy: Temporal characteristics and impact of anesthetic regimen. Clinical Neurophysiology, 2021, 132, 977-983. | 1.5 | 3 |
| 33 | Enhancing task fMRI preprocessing via individualized modelâ€based filtering of intrinsic activity dynamics. NeuroImage, 2022, 247, 118836. | 4.2 | 3 |
| 34 | Developing control-theoretic objectives for large-scale brain dynamics and cognitive enhancement. Annual Reviews in Control, 2022, 54, 363-376. | 7.9 | 3 |
| 35 | Biophysical modeling of alpha rhythms during halothane-induced unconsciousness. , 2013, , 1104-1107. | | 2 |
| 36 | Non-negative inputs for underactuated control of spiking in coupled integrate-and-fire neurons. , 2014, , . | | 2 |

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|---|---|---|---|
| 37 | Recurrent Information Optimization with Local, Metaplastic Synaptic Dynamics. Neural Computation, 2017, 29, 2528-2552. | 2.2 | 2 |
| 38 | Bispectral analysis for measuring energy-orientation tradeoffs in the control of linear systems. Systems and Control Letters, 2017, 102, 68-73. | 2.3 | 2 |
| 39 | Optimizing the dynamics of spiking networks for decoding and control. , 2017, , . | | 2 |
| 40 | Learning-based Approaches for Controlling Neural Spiking. , 2018, 2018, . | | 2 |
| 41 | Biophysically interpretable inference of single neuron dynamics. Journal of Computational Neuroscience, 2019, 47, 61-76. | 1.0 | 2 |
| 42 | Spiking networks as efficient distributed controllers. Biological Cybernetics, 2019, 113, 179-190. | 1.3 | 2 |
| 43 | Localizing focal brain injury via EEG spectral variance. Biomedical Signal Processing and Control, 2021, 68, 102746. | 5.7 | 2 |
| 44 | Learning to Control Neurons using Aggregated Measurements. , 2020, , . | | 2 |
| 45 | Detecting slow narrowband modulation in EEG signals. Journal of Neuroscience Methods, 2022, 378, 109660. | 2.5 | 2 |
| 46 | Endpoint-based discriminability of minimum energy inputs. , 2016, , . | | 1 |
| 47 | The Geometry of Plasticity-Induced Sensitization in Isoinhibitory Rate Motifs. Neural Computation, 2016, 28, 1889-1926. | 2.2 | 1 |
| 48 | On the Output of Nonlinear Systems Excited by Discrete Prolate Spheroidal Sequences. IEEE Transactions on Automatic Control, 2017, 62, 5780-5787. | 5.7 | 1 |
| 49 | Recurrent networks with soft-thresholding nonlinearities for lightweight coding. Neural Networks, 2017, 94, 212-219. | 5.9 | 1 |
| 50 | Sensitivity of linear systems to input orientation and novelty. Automatica, 2018, 93, 462-468. | 5.0 | 1 |
| 51 | Geometric classification of brain network dynamics via conic derivative discriminants. Journal of Neuroscience Methods, 2018, 308, 88-105. | 2.5 | 1 |
| 52 | Computing and optimizing over all fixed-points of discrete systems on large networks. Journal of the Royal Society Interface, 2020, 17, 20200126. | 3.4 | 1 |
| 53 | Neural Circuit Dynamics for Sensory Detection. Journal of Neuroscience, 2020, 40, 3408-3423. | 3.6 | 1 |
| 54 | Identifying Disruptions in Intrinsic Brain Dynamics due to Severe Brain Injury. , 2017, 2017, 344-348. | | 0 |

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|---|---|---|---|
| 55 | Control-Theoretic Approaches for Modeling, Analyzing, and Manipulating Neuronal (In)activity. , 2018, , 219-238. | | 0 |
| 56 | Information spectra and optimal background states for dynamical networks. Scientific Reports, 2018, 8, 16181. | 3.3 | 0 |
| 57 | Network Restructuring Control for Conic Invariance with Application to Neural Networks. , 2018, , . | | 0 |
| 58 | Multiple Timescale Online Learning Rules for Information Maximization with Energetic Constraints. Neural Computation, 2019, 31, 943-979. | 2.2 | 0 |
| 59 | Synthesis of recurrent neural dynamics for monotone inclusion with application to Bayesian inference. Neural Networks, 2020, 131, 231-241. | 5.9 | 0 |
| 60 | Creating functionally favorable neural dynamics by maximizing information capacity. Neurocomputing, 2020, 400, 285-293. | 5.9 | 0 |
| 61 | Defining information-based functional objectives for neurostimulation and control. , 2019, , . | | 0 |