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	School of Life Science and Technology,		dqguo07@gmail.com
	University of Electronic Science and Technology of China,	**Researcher ID:**	G-5867-2010
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Homepage: http://scholar.google.com.au/citations?user=r3XU9PEAAAAJ&hl=en
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RESEARCH INTERESTS

Computational neuroscience emphasizing on neural regulation of brain diseases and functional roles of neural circuits

SUMMARY OF QUALIFICATIONS

A Ph.D. degree in EE, a M.S. degree in CS, strong physical and mathematical abilities, and strong backgrounds in neuroscience and biology

EDUCATION

- **University of Electronic Science and Technology of China (UESTC)**, Chengdu   **07/2007- 06/2011**
  Ph.D. in Circuits and systems
  Thesis: Research on Signal Transmission and Processing in Complex Neural Systems (**Grade: 5A**)
  Supervisor: **Prof. Chunguang Li**

- **Graduate School of the Chinese Academy of Sciences (GSCAS)**, Peking   **09/2004 – 07/2007**
  M.S. in Computer Science
  Thesis: The Study and Improvement of Particle Swarm Optimization (**Grade: excellent**)
  Supervisor: **Prof. Yingfan Li**

- **University of Electronic Science and Technology of China**, Chengdu   **09/2000 – 07/2004**
  B.S. both in Automation and in Computer Science

PROFESSIONAL POSITIONS

- **Associate Professor**   **06/2013-present**
  Key Laboratory for NeuroInformation of Ministry of Education,
  School of Life Science and Technology, UESTC
  PhD supervisor since 2017

- **Assistant Professor**   **10/2012-06/2013**
  Key Laboratory for NeuroInformation of Ministry of Education,
  School of Life Science and Technology, UESTC

- **Postdoctoral Research Fellow**   **06/2011-09/2012**
  Computational Neuroscience Unit, Okinawa Institute of Science and Technology (OIST), Japan

JOURNAL PUBLICATIONS

[1] Shengdun Wu[#]; Yangsong Zhang[#]; Yan Cui; Heng Li; Jiakang Wang; Lijun Guo; Yang Xia; Dezhong Yao; Peng Xu; **Daqing Guo**[*], Heterogeneity of synaptic input connectivity regulates spike-based neuronal avalanches, Neural Networks, 2019.2, 110: 91~103

[2] **Daqing Guo**[*]; Dezhong Yao, Establishing the first theoretical basis of neuronal chimera states: Comment on "Chimera states in neuronal networks: A review" by M. Perc et al., Physics of Life Reviews, 2019, in press, doi: 10.1016/j.plrev.2019.02.004

[3] **Daqing Guo**[*]; Matjaz Perc; Tiejun Liu; Dezhong Yao, Functional importance of noise in neuronal information processing, EPL, 2018.12.28, 124(5): 50001

[4] Yan Cui; Shuang Yu; Tianjiao Zhang; Yangsong Zhang; Yang Xia[*]; Dezhong Yao; **Daqing Guo**[*], Altered activity and information flow in the default mode network of pilocarpine-induced epilepsy rats, Brain Research, 2018.10.1, 1696: 71~80

[5] Yangsong Zhang[#]; Erwei Yin[#]; Fali Li; Yu Zhang; Toshihisa Tanaka; Qibin Zhao; Yan Cui; Peng Xu; Dezhong Yao; **Daqing Guo***, Two-stage frequency recognition method based on correlated component analysis for SSVEP-based BCI, IEEE Transactions on Neural Systems and Rehabilitation Engineering, 2018.6.18, 26(7): 1314~1323

[6] **Daqing Guo**[#,*]; Fengru Guo[#]; Yangsong Zhang[*]; Fali Li; Yang Xia; Peng Xu; Dezhong Yao, Periodic Visual Stimulation Induces Resting-State Brain Network Reconfiguration, Frontiers in Computational Neuroscience, 2018.3.28, 12(21)

[7] **Daqing Guo**[*]; Matjaž Perc; Yangsong Zhang; Peng Xu; Dezhong Yao, Frequency-difference-dependent stochastic resonance in neural systems, Physical Review E, 2017.8.25, 96(2): 022415

[8] **Daqing Guo***; Chuan Xia; Shengdun Wu; Tianjiao Zhao; Yangsong Zhang; Yang Xia; Dezhong Yao, Stochastic fluctuations of permittivity coupling regulate seizure dynamics in partial epilepsy, Science China-Technological Sciences, 2017.4.27, 60(7): 995~1002

[9] Mingming Chen[#]; **Daqing Guo**[#,*]; Yang Xia; Dezhong Yao[*], Control of absence seizures by the thalamic feed-forward inhibition, Frontiers in Computational Neuroscience, 2017.4.26, 11(31)

[10] **Daqing Guo***; Mingming Chen; Matjaž Perc; Shengdun Wu; Chuan Xia; Yangsong Zhang; Peng Xu; Yang Xia; Dezhong Yao, Firing regulation of fast-spiking interneurons by autaptic inhibition, EPL, 2016.5.24, 114(3): 30001

[11] **Daqing Guo**[*]; Shengdun Wu; Mingming Chen; Matjaž Perc; Yangsong Zhang; Jingling Ma; Yan Cui; Peng Xu; Yang Xia; Dezhong Yao, Regulation of irregular neuronal firing by autaptic transmission, Scientific Reports, 2016.5.17, 6: 26096

[12] Yangsong Zhang[*]; **Daqing Guo**[*]; Peng Xu; Yu Zhang; Dezhong Yao, Robust frequency recognition for SSVEP-based BCI with temporally local multivariate synchronization index, Cognitive Neurodynamics, 2016.12, 10(6): 505~511

[13] Mingming Chen[#]; **Daqing Guo**[#,*]; Min Li; Tao Ma; Sheng dun Wu; Jing ling Ma; Yan Cui; Yang Xia; Peng Xu; DezhongYao[*], Critical Roles of the Direct GABAergic Pallido-cortical Pathway in Controlling Absence Seizures, PLoS Computational Biology, 2015.10.23, 11(10): e1004539

[14] Yangsong Zhang; **Daqing Guo**[*]; Kaiwen Cheng; Dezhong Yao; Peng Xu[*], The graph theoretical analysis of the SSVEP harmonic response networks, Cognitive Neurodynamics, 2015.6, 9(3): 305~315

[15] Mingming Chen[#]; **Daqing Guo**[#,*]; Tiebin Wang; Wei Jing; Yang Xia; Peng Xu; Cheng Luo; Pedro A. Valdes-Sosa; Dezhong Yao(*), Bidirectional Control of Absence Seizures by the Basal Ganglia: A Computational Evidence, PLoS Computational Biology, 2014.3.13, 10(3): e1003495

[16] **Daqing Guo**[*]; Qingyun Wang; Matjaž Perc, Complex synchronous behavior in interneuronal networks with delayed inhibitory and fast electrical synapses, Physical Review E, 2012.6.7, 85(6): 061905

[17] Yangsong Zhang; **Daqing Guo**[*]; Fali Li; Erwei Yin; Yu Zhang; Peiyang Li; Qibin Zhao; Toshihisa Tanaka; Dezhong Yao[*]; Peng Xu[*], Correlated Component Analysis for Enhancing the Performance of SSVEP-Based Brain-Computer Interface, IEEE Transactions on Neural Systems and Rehabilitation Engineering, 2018.4.13, 26(5): 948~956

[18] **Daqing Guo**; Chunguang Li[*], Self-sustained irregular activity in 2-D small-world networks of excitatory and inhibitory neurons, IEEE Transactions on Neural Networks, 2010.4.12, 21(6): 895~905

[19] **Daqing Guo**; Chunguang Li[*], Stochastic and coherence resonance in feed-forward-loop neuronal network motifs, Physical Review E, 2009.5.27, 79(5): 051921

[20] **Daqing Guo**; Chunguang Li[*], Stochastic resonance in Hodgkin−Huxley neuron induced by unreliable synaptic transmission, Journal of Theoretical Biology, 2012.9.7, 308: 105~114

[21] **Daqing Guo**; Chunguang Li[*], Population rate coding in recurrent neuronal networks with unreliable synapses, Cognitive Neurodynamics, 2012, 6(1): 75~87

[22] **Daqing Guo**; Chunguang Li[*], Signal propagation in feedforward neuronal networks with unreliable synapses, Journal of Computational Neuroscience, 2011, 30(3): 567~587

[23] **Daqing Guo**[*], Inhibition of rhythmic spiking by colored noise in neural systems, Cognitive Neurodynamics, 2011.6.29, 5(3): 293~300

[24] Joyce Chelangat Bore; Chanlin Yi; Peiyang Li; Fali Li; Dennis Joe Harmah; Yajing Si; **Daqing Guo**; Dezhong Yao; Feng Wan; Peng Xu[*], Sparse EEG Source Localization Using LAPPS: Least Absolute l-P

(0<p<1) Penalized Solution, IEEE Transactions on Biomedical Engineering, 2019, in press, doi: 10.1109/TBME.2018.2881092

[25] Lingyu Liu; Ruiling Zhang; Lin Chen; Hongyan Zhao; Jie Cai; Jiakang Wang; **Daqing Guo**; Yanjun Cui[*]; Guogang Xing[*], Chronic stress increases pain sensitivity via activation of the rACC–BLA pathway in rats, Experimental Neurology, 2019, 313: 109~123

[26] Peiyang Li; Weiwei Zhou; Xiaoye Huang; Xuyang Zhu; Huan Liu; Teng Ma; **Daqing Guo**; Dezhong Yao; Peng Xu[*], Improved Graph Embedding for Robust Recognition with outliers, Scientific Reports, 2018.3.9, 8: 4231

[27] Jing Lu; Sijia Guo; Mingming Chen; Weixia Wang; Hua Yang; **Daqing Guo**; Dezhong Yao[*], Generate the scale-free brain music from BOLD signals, Medicine, 2018.1.12, 97(2): e9628

[28] Yin Tian[*]; Li Yang; Sifan Chen; **Daqing Guo**; Zechao Ding; Kin Yip Tam; Dezhong Yao[*], Causal interactions in resting-state networks predict perceived loneliness, PLoS One, 2017, 12(5): e0177443

[29] Zhuocheng Yan; Taisong Pan; Miaomiao Xue; Changyong Chen; Yan Cui; Guang Yao; Long Huang; Feiyi Liao; Wei Jing; Hulin Zhang; Min Gao; **Daqing Guo**; Yang Xia; Yuan Lin[*], Thermal release transfer printing for stretchable conformal bioelectronics, Advanced Science, 2017.11, 4(11): 1700251

[30] Shyam Kumar Sudhakar[#]; Sungho Hong[#]; Ivan Raikov; Rodrigo Publio; Claus Lang; Thomas Close; **Daqing Guo**; Mario Negrello; Erik De Schutter[*], Spatiotemporal network coding of physiological mossy fiber inputs by the cerebellar granular layer, PLoS Computational Biology, 2017.9.21, 13(9): e1005754

[31] Peiyang Li; Xiaoye Huang; Fali Li; Xurui Wang; Weiwei Zhou; Huan Liu; Teng Ma; Tao Zhang; **Daqing Guo**; Dezhong Yao; Peng Xu[*], Robust Granger Analysis in Lp Norm Space for Directed EEG Network Analysis, IEEE Transactions on Neural Systems and Rehabilitation Engineering, 2017.6.5, 25(11): 1959~1969

[32] Yangsong Zhang[*]; **Daqing Guo**; Dezhong Yao; Peng Xu[*], The extension of multivariate synchronization index method for SSVEP-based BCI, Neurocomputing, 2017.6.2, 269: 226~231

[33] Changyong Chen; Miaomiao Xue; Yige Wen; Guang Yao; Yan Cui; Feiyi Liao; Zhuocheng Yan; Long Huang; Saeed Ahmed Khan; Min Gao; Taisong Pan; Hulin Zhang; Wei Jing; **Daqing Guo**; Sanfeng Zhang; Hailiang Yao; Xiong Zhou; Qiang Li; Yang Xia[*]; Yuan Lin[*], A Ferroelectric Ceramic/Polymer Composite‑Based Capacitive Electrode Array for In Vivo Recordings, Advanced Healthcare Materials, 2017, 6(16): 1700305

[34] Wei Jing; **Daqing Guo**; Yunxiang Zhang; Fengru Guo; Pedro A Valdes-Sosa; Yang Xia[*]; Dezhong Yao, Reentrant Information Flow in Electrophysiological Rat Default Mode Network, Frontiers in Neuroscience, 2017.2.27, 11(93)

[35] Wei Jing; Yanran Wang; Guangzhan Fang; Mingming Chen; Miaomiao Xue; **Daqing Guo**; Dezhong Yao[*]; Yang Xia[*], EEG bands of wakeful rest, slow-wave and rapid-eye-movement sleep at different brain areas in rats, Frontiers in Computational Neuroscience, 2016.8.3, 10(79)

[36] Fali Li; Bei Chen; He Li; Tao Zhang; Fei Wang; Yi Jiang; Peiyang Li; Teng Ma; Rui Zhang; Yin Tian; Tiejun Liu; **Daqing Guo**; Dezhong Yao; Peng Xu[*], The time-varying networks in P300: a task-evoked EEG study, IEEE Transactions on Neural Systems and Rehabilitation Engineering, 2016.7.14, 24(7): 725~733

[37] Yingshou Xing; Wenxi Chen; Yanran Wang; Wei Jing; Shan Gao; **Daqing Guo**; Yang Xia[*]; Dezhong Yao, Music exposure improves spatial cognition by enhancing the BDNF level of dorsal hippocampal subregions in the developing rats, Brain Research Bulletin, 2016.3, 121: 131~137

[38] Yingshou Xing; Yi Qin; Wei Jing; Yunxiang Zhang; Yanran Wang; **Daqing Guo**; Yang Xia[*]; Dezhong Yao, Exposure to Mozart music reduces cognitive impairment in pilocarpine-induced status epilepticus rats, Cognitive Neurodynamics, 2016.2, 10(1): 23~30

[39] Yingshou Xing[#]; Yang Xia[#]; Keith Kendrick; Xiuxiu Liu; Maosen Wang; Dan Wu; Hua Yang; Wei Jing; **Daqing Guo**; Dezhong Yao[*], Mozart, Mozart rhythm and retrograde Mozart effects: evidences from behaviours and neurobiology bases, Scientific Reports, 2016.1.21, 6: 18744

[40] Fali Li; Tiejun Liu; Fei Wang; He Li; Diankun Gong; Rui Zhang; Yi Jiang; Yin Tian; **Daqing Guo**; Dezhong Yao; Peng Xu[*], Relationships between the resting-state network and the P3: Evidence from a scalp EEG study, Scientific Reports, 2015.10.12, 5: 15129

[41] Fali Li; Yin Tian; Yangsong Zhang[*]; Kan Qiu; Chunyang Tian; Wei Jing; Tiejun Liu; Yang Xia; **Daqing Guo**; Dezhong Yao[*]; Peng Xu[*], The enhanced information flow from visual cortex to frontal area

facilitates SSVEP response: evidence from model-driven and data-driven causality analysis, Scientific Reports, 2015.10.5, 5: 14765

[42] Bing Hu; **Daqing Guo**; Qingyun Wang*, Control of absence seizures induced by the pathways connected to SRN in corticothalamic system, Cognitive Neurodynamics, 2015.6, 9(3): 279~289

[43] Peiyang Li[#]; Xurui Wang[#]; Fali Li; Rui Zhang; Teng Ma; Yueheng Peng; Xu Lei; Yin Tian; **Daqing Guo**; Tiejun Liu; Dezhong Yao; Peng Xu*, Autoregressive model in the Lp norm space for EEG analysis, Journal of Neuroscience Methods, 2015.1.30, 240: 170~178

[44] Yangsong Zhang; Peng Xu; **Daqing Guo**; Dezhong Yao*, Prediction of SSVEP-based BCI performance by the resting-state EEG network, Journal of Neural Engineering, 2013.11.27, 10(6): 066017

[45] M Uzuntarla*; M Ozer; **Daqing Guo**, Controlling the first-spike latency response of a single neuron via unreliable synaptic transmission, The European Physical Journal B, 2012.8.13, 85: 282

* Corresponding authors #Authors contributed equally to this work

PROFESSIONAL ACTIVITIES

- **Editors**
  - ◇ Editor for **Neurocomputing**
  - ◇ Review Editor and Guest Associate Editor for **Frointers in Computational Neuroscience**

- **Memberships**
  - ◇ Chinese Neuroscience Society   **2013-presnet**
  - ◇ Organization for Computational Neurosciences   **2012-presnet**
  - ◇ Committee member of Biocybernetics and Biomedical engineering, Chinese Automation Association   **2013-presnet**
  - ◇ Chinese Society of Neural Engineering   **2015-presnet**

- **Committee member of International Conferences**
  - ◇ The 4th International Conference on NeuroInformation

- **Invited Talks**
  - ◇ Plenary lecture at BRAINMODE 2018, Havana, Cuba
  - ◇ MAA Invited Paper Session "Differential Equations and Their Applications to Neuroscience", 2018 Joint Mathematics Meetings, Chicago, USA
  - ◇ 2017 International Workshop on Neurodynamics and Its Applications, Nagano, Japan
  - ◇ The 24th International Conference On Neural Information Processing (ICONIP 2017), Session: Dynamics of neural systems and implications to neural information processing, Guangzhou, China
  - ◇ The 6th International Conference on Cognitive Nuerodynamics (ICCN 2017), Symposia 10 (Analysis of electrophysiological signals in brain dynamics) & Symposia 12 (Dynamic modelling of EEG and fMRI), Seville, Spain
  - ◇ Platform of theoretical physics (2016/10), Lanzhou University, Lanzhou, China
  - ◇ 2nd International Workshop on High Frequency Oscillations in Epilepsy, Platform talk, Freiburg, Germany
  - ◇ The 5th International Conference on Cognitive Nuerodynamics (NeuroInformation Computation Session), Sanya, China
  - ◇ EEG Workshop: Controversies in EEG source analysis, Chengdu, China
  - ◇ The 13th Japan-China-Korea Joint Workshop (NBNI 2013), Beijing Normal University, Beijing
  - ◇ Session on Computational neuroscience, CBME 2013, UESTC, Chengdu, China

- **Frequent Reviewer**
  for Neuroimage, PLoS Computational Biology, Frontiers in Computational Neuroscience, Physical Review E, Scientific Reports, Journal of Theoretical Biology, IEEE TNNLS, Cognitive Neurodynamics, Information Sciences, PLoS One, Physica A, Physical Letter A and International Journal of Systems Science, et al.

SELECTED GRANTS

- National Natural Science Foundation of China (No. 31771149, Principal Investigator)   **2018-2021**

- National Natural Science Foundation of China (No. 81571170, Principal Investigator) **2016-2019**
- National Natural Science Foundation of China (No. 61527815, Co-Principal Investigator) **2016-2019**
- National Natural Science Foundation of China (No. 61201278, Principal Investigator) **2013-2015**

HONORS & SCHOLARSHIPS
- Travel award, the 2nd International Workshop on High Frequency Oscillations in Epilepsy, Freiburg, Germany, 2016
- Travel award, the 7th International Workshop on Seizure prediction, Melbourne, Australia, 2015
- People's Scholarship for Excellent Postgraduate Student, UESTC, 2010
- Award of Ongoing Best PhD Thesis (Top 1%), UESTC, 2009
- Copper prize of the Third Art Festival, GSCAS, 2005
- Scholarship for Postgraduate Student, GSCAS, 2004 –2007
- People's Scholarship for Excellent Undergraduate Student, 2004
- People's Scholarship for Excellent Undergraduate Student, 2003
- People's Scholarship for Excellent Undergraduate Student, 2001

REFERENCES
- Dr. Chunguang Li, Professor in Electronic Engineering, Zhejiang University, Email: cgli@zju.edu.cn
- Dr. Dezhong Yao, Professor in Biomedical Engineering, UESTC, Email: dyao@uestc.edu.cn
- Dr. Matjaz Perc, Professor in Physics, University of Maribor, Email: matjaz.perc@uni-mb.si
- Dr. Qingyun Wang, Professor in Dynamics and Control, Email: nmqingyun@163.com