Zhih-Ahn Jia[1]

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Physics.StackExchange:	https://physics.stackexchange.com/users/149857/zhih-ahn-jia
MathOverFlow:	https://mathoverflow.net/users/106491/zhih-ahn-jia

Academic Experience

Sep 2015 - Jun 2021	CAS Key Laboratory of Quantum Information, **University of Science and Technology of China**, Hefei, China Advisor: Guang-Can Guo PhD degree in Physics Thesis: Classification, criteria and properties of quantum correlations and their applications in quantum many-body systems
Nov 2018 - Dec 2019	Microsoft Station Q, Department of Mathematics, **University of California, Santa Barbara**, CA, US Advisor: Zhenghan Wang Visiting scholar program
Sep 2017 - Aug 2018	Yau Mathematical Sciences Center, Department of Mathematical Sciences, **Tsinghua University**, Beijing, China Advisor: Liang Kong Visiting Ph.D.
Sep 2011 - Jun 2015	Institute of Super-microstructure and Ultrafast Process in Advanced Materials, School of Physics and Electronics, **Central South University**, Changsha, China Advisor: Fangping Ouyang B.S. in Applied Physics Thesis: Impurity effect of vacancy in two dimensional crystals and related quantum Hall effect

Selected Awards

2017	Guorui scholarship for graduate students
2016	National scholarship for graduate students
2016	The Best Presenters' Prize Talk title: monogamy as a fundamental quantum phenomenon The third PFUNT(Physics Five Universities,the National Top) PhD Student Forum
2016	The Third Prize of Talk Talk title: graph theoretic approach to quantum contextuality The sixth graduate student academic annual meeting of USTC
2015	The Outstanding Project Prize project title: First Principle Method of Single Layer Graphene-like Material and Its Functional Devices Design College students' innovative and entrepreneurial project
2014	College scholarships of Physics and Electronics, Central South University
2010	The Second Prize of The 27th national physics olympiad, 2010.

[1]Chinese (Mandarin): Zhian Jia or Zhi-An Jia; English name: Elliott Jia

Publications and preprints [arXiv]

- **Zhih-Ahn Jia**, Lu We, Yu-Chun Wu, Guang-Can Guo
  Quantum Advantages of Communication Complexity from Bell Nonlocality
  arXiv:2004.05098
- Yu Meng, Shang Yu, **Zhih-Ahn Jia**, Yi-Tao Wang, Zhi-Jin Ke, Wei Liu, Zhi-Peng Li, Yuan-Ze Yang, Hang Wang, Yu-Chun Wu, Jian-Shun Tang, Chuan-Feng Li, Guang-Can Guo
  Environment-induced sudden change of coherence in quantum systems
  Phys. Rev. A 102, 042415 (2020)
- **Zhih-Ahn Jia**, Lu We, Yu-Chun Wu, Guang-Can Guo, Guo-Ping Guo
  Entanglement Area Law for Shallow and Deep Quantum Neural Network States
  New J. Phys. 22 053022 (2020)
- **Zhih-Ahn Jia**, Biao Yi, Rui Zhai, Yu-Chun Wu, Guang-Can Guo and Guo-Ping Guo
  Quantum Neural Network States: A Brief Review of Methods and Applications
  Adv. Quantum Technol.2019, 1800077
- **Zhih-Ahn Jia**, Yuan-Hang Zhang, Yu-Chun Wu, Guang-Can Guo and Guo-Ping Guo
  Efficient Machine Learning Representations of Surface Code with Boundaries, Defects, Domain Walls and Twists
  Phys. Rev. A 99, 012307 (2019)
- Yuan-Hang Zhang, **Zhih-Ahn Jia**, Yu-Chun Wu, and Guang-Can Guo
  An Efficient Algorithmic Way to Construct Boltzmann Machine Representations for Arbitrary Stabilizer Code
  arXiv:1809.08631
- **Zhih-Ahn Jia**, Rui Zhai, Yu-Chun Wu, and Guang-Can Guo
  Entropic No-Disturbance as a Physical Principle
  Phys. Rev. A 97, 052128 (2018)
- Shang Yu, Chang-Jiang Huang, Jian-Shun Tang, **Zhih-Ahn Jia**, Yi-Tao Wang, Zhi-Jin Ke, Wei Liu, Zong-Quan Zhou, Ze-Di Cheng, Jin-Shi Xu, Yu-Chun Wu, Yuan-Yuan Zhao, Guo-Yong Xiang, Chuan-Feng Li, Guang-Can Guo, Gael Sentís, and Ramon Muñoz-Tapia
  Experimentally Detecting a Quantum Change Point via Bayesian Inference
  Phys. Rev. A 98, 040301(R) (2018)
- Bai-Chu Yu, **Zhih-Ahn Jia**, Yu-Chun Wu, and Guang-Can Guo
  Geometric Local Hidden State Model for Some Two-qubit States
  Phys. Rev. A 98, 052345 (2018)
- Bai-Chu Yu, **Zhih-Ahn Jia**, Yu-Chun Wu, and Guang-Can Guo
  Geometric Steering Criterion for Two-qubit States
  Phys. Rev. A 97, 012130 (2018)
- **Zhih-Ahn Jia**, Rui Zhai, Shang Yu, Yu-Chun Wu, and Guang-Can Guo
  Hierarchy of Genuine Multipartite Quantum Correlations
  arXiv:1711.04664
- **Zhih-Ahn Jia**, Gao-Di Cai, Yu-Chun Wu, Guang-Can Guo, and Adán Cabello
  The Exclusivity Principle Determines the Correlation Monogamy
  arXiv:1707.03250
- **Zhih-Ahn Jia**, Yu-Chun Wu, and Guang-Can Guo
  Characterizing nonlocal correlations via universal uncertainty relations
  Phys. Rev. A 96, 032122(2017)
- **Zhih-Ahn Jia**, Yu-Chun Wu, and Guang-Can Guo
  Monogamy Relation in No-disturbance Theories
  Phys. Rev. A 94, 012111(2016)
- SHAO Yan, OUYANG Fang-Ping, PENG Sheng-Lin, LIU Qi, **JIA Zhi-An**, ZOU Hui
  First-Principles Calculations of Electronic Properties of Defective Armchair MoS_2 Nanoribbons
  [J]. Acta Phys. -Chim. Sin., 2015,31 (11): 2083-2090.

Computer Skills

Programming Languages:	Python, C, C++, Matlab, LaTeX
Operating System:	Windows, macOS, Ubuntu

Selected Attended Conferences

Dec 16 - 20, 2019	Topological quantum computing (TQC2019) Southern University of Science and Technology, Peng Cheng Laboratory Institute for quantum science and engineering, Shenzhen, China
Aug 13 - 17, 2018	Summer school on AdS/CFT Center for High Energy Physics, Peking University, Beijing, China
Jul 16 - 20, 2018	Tsinghua Summer School on Quantum Physics (TSSQP) State Key Laboratory of Low-Dimensional Quantum Physics, Tsinghua University, Beijing, China
Jul 4 - 6, 2018	The First International Conference on Machine Learning and Physics Institute for Advanced Study, Tsinghua University, Beijing, China
May 4 - 6, 2018	Conference: Topological Matter and Topological Computation Kavli Institute for Theoretical Sciences, University of Chinese Academy of Sciences, Beijing, China
Mar 19 - 23, 2018	Quantum Machine Learning and Biomimetic Quantum Technologies University of the Basque Country, Leioa, Spain
Jun 20 - 30, 2017	Workshop: Tensor categories and topological quantum matter Fudan University, Shanghai, China
Jun 4 - 5, 2017	Workshop: Quantum Contextuality in Quantum Mechanics and Beyond Talk title: Exclusivity principle determines the correlation monogamy Prague, Czech Republic
Jan 23 - 26, 2017	Conference on 90 Years of Quantum Mechanics Nanyang technological university, Singapore
Dec 15 - 17, 2016	The Third PFUNT(Physics Five Universities,the National Top) PhD Student Forum Talk title: monogamy as a fundamental quantum phenomenon Tsinghua university, Beijing, China
Nov 26, 2016	The Sixth Graduate Student Academic Annual Meeting of USTC Talk title: graph theoretical approach to quantum contextuality University of Science and Technology of China, Hefei, China
Aug 6 - 8, 2016	The 17th National Conference on Quantum Optics Talk title: monogamy relations of different kinds of quantum correlations Lanzhou university, Lanzhou, China
Aug 1 - 6, 2016	Strings 2016 conference Tsinghua University, Beijing, China
Jun 16- Jul 16, 2016	Summer School on Supersymmetry and Fiber bundle University of Chinese Academy of Sciences, Beijing, China
May 23 - 24, 2015	The First Conference of The Second Revolution of Quantum Mechanics University of Science and Technology of China, Hefei, China