

# LUCHANG JIN

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## EDUCATION

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<b>Columbia University, Graduate School of Arts and Sciences</b> Doctor of Philosophy in Physics	<b>New York, NY</b> Aug 2016
<b>Peking University, Physics Department</b> Bachelor of Science in Physics	<b>Beijing, China</b> May 2011

## RESEARCH EXPERIENCE

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<b>University of Connecticut</b> Assistant Professor	<b>Storrs, CT</b> 2017-now
<b>Brookhaven National Laboratory</b> Research Associate	<b>Upton, NY</b> 2016-2017
<b>Columbia University</b> Graduate Research Assistant	<b>New York, NY</b> 2012-2016

## AWARDS

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- DOE Early Career Award, 2020.
- Kenneth G. Wilson Award for Excellence in Lattice Field Theory, 2019.
- Intel Fellowship for exceptional research achievements by a PhD student, 2016.
- Champion of Battlecode – MIT AI programming competition (teamed with Greg McGlynn), 2016.
- Joseph C. Pfister Fellowship Fund, 2013-2014.
- Faculty Fellowship in Physics Department, 2011-2013.
- First place in Mini-CUSPEA program, 2011.
- Meritorious Winner in US Mathematical Contest in Modeling, 2010.
- First Prize in Chinese Physics Olympiad, 2006.
- First Prize in Chinese National Olympiad in Informatics in Provinces, 2005.

## SYNERGISTIC ACTIVITIES

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- Chair of the Local Organizing Committee  
“[Muon  \$g - 2\$  Theory Initiative Hadronic Light-by-Light Working Group Workshop](#)”  
University of Connecticut, March 12th - March 14th, 2018
- Invited plenary talk at:  
Brookhaven Forum 2019: Particle Physics and Cosmology in the 2020's, 09/2019  
The 37th Annual International Symposium on Lattice Field Theory (LATTICE 2019), 06/2019  
The 36th Annual International Symposium on Lattice Field Theory (LATTICE 2018), 07/2018
- Invited talks at:  
Hadronic contributions to  $(g - 2)_\mu$ , INT Workshop, INT-19-74W, 09/2019  
USQCD All-Hands Collaboration Meeting, BNL, 04/2019  
Lattice Workshop for US - Japan Intensity Frontier Incubation, BNL, 03/2019  
The first workshop of Southern Nuclear Science Computing Center, SCNU, 01/2019  
SchwingerFest2018:  $g-2$ , UCLA, 12/2018  
Second Plenary Workshop of the Muon  $g-2$  Theory Initiative, Mainz, 06/2018

First Workshop of the Muon g-2 Theory Initiative, Q Center, 06/2017

QCD Evolution 2017, Jefferson Lab, 05/2017

Lattice PDF Workshop, University of Maryland, 04/2018

22nd International Spin Symposium, UIUC, 09/2016

CIPANP 2015, Vail CO, 05/2015

- Invited lectures at “Summer School on Frontiers in Lattice QCD at Peking University”, 07/2019
- Invited physics colloquium at Zhejiang University, 12/2018
- Invited talk and participation in the program “Nuclear Physics from Lattice QCD”, INT, Seattle, 03/2016

## PUBLICATIONS

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- C. Y. Seng, X. Feng, M. Gorchtein and L. C. Jin, “Joint lattice QCD–dispersion theory analysis confirms the quark-mixing top-row unitarity deficit,” *Phys. Rev. D* 101, no.11, 111301 (2020) [arXiv:2003.11264](#).
- X. Feng, M. Gorchtein, L. C. Jin, P. X. Ma and C. Y. Seng, “First-principles calculation of electroweak box diagrams from lattice QCD,” **Phys.Rev.Lett.** 124, no.19, 192002 (2020) [arXiv:2003.09798](#).
- T. Blum, N. Christ, M. Hayakawa, T. Izubuchi, L. Jin, C. Jung and C. Lehner, “Hadronic Light-by-Light Scattering Contribution to the Muon Anomalous Magnetic Moment from Lattice QCD,” **Phys.Rev.Lett.** 124, no.13, 132002 (2020) [arXiv:1911.08123](#).
- X. Feng, Y. Fu and L. C. Jin, “Lattice QCD calculation of the pion charge radius using a model-independent method,” *Phys. Rev. D* 101, no.5, 051502 (2020) [arXiv:1911.04064](#).
- X. Y. Tuo, X. Feng and L. C. Jin, “Long-distance contributions to neutrinoless double beta decay  $\pi^- \rightarrow \pi^+ ee$ ,” *Phys. Rev. D* 100, no.9, 094511 (2019) [arXiv:1909.13525](#).
- T. Izubuchi, L. Jin, C. Kallidonis, N. Karthik, S. Mukherjee, P. Petreczky, C. Shugert and S. Syritsyn, “Valence parton distribution function of pion from fine lattice,” *Phys. Rev. D* 100, no.3, 034516 (2019) [arXiv:1905.06349](#).
- X. Feng and L. Jin, “QED self energies from lattice QCD without power-law finite-volume errors,” *Phys. Rev. D* 100, no.9, 094509 (2019) [arXiv:1812.09817](#).
- X. Feng, L. C. Jin, X. Y. Tuo and S. C. Xia, “Light-Neutrino Exchange and Long-Distance Contributions to  $0\nu 2\beta$  Decays: An Exploratory Study on  $\pi\pi \rightarrow ee$ ,” **Phys.Rev.Lett.** 122, no.2, 022001 (2019) [arXiv:1809.10511](#).
- H. W. Lin, J. W. Chen, X. Ji, L. Jin, R. Li, Y. S. Liu, Y. B. Yang, J. H. Zhang and Y. Zhao, “Proton Isovector Helicity Distribution on the Lattice at Physical Pion Mass,” **Phys.Rev.Lett.** 121, no.24, 242003 (2018) [arXiv:1807.07431](#).
- Y. S. Liu *et al.* [Lattice Parton], “Unpolarized isovector quark distribution function from lattice QCD: A systematic analysis of renormalization and matching,” *Phys. Rev. D* 101, no.3, 034020 (2020) [arXiv:1807.06566](#).
- J. H. Zhang, J. W. Chen, L. Jin, H. W. Lin, A. Schäfer and Y. Zhao, “First direct lattice-QCD calculation of the  $x$ -dependence of the pion parton distribution function,” *Phys. Rev. D* 100, no.3, 034505 (2019) [arXiv:1804.01483](#).
- T. Blum *et al.* [RBC and UKQCD], “Calculation of the hadronic vacuum polarization contribution to the muon anomalous magnetic moment,” **Phys.Rev.Lett.** 121, no.2, 022003 (2018) [arXiv:1801.07224](#).
- X. Ji, L. C. Jin, F. Yuan, J. H. Zhang and Y. Zhao, “Transverse momentum dependent parton quasidistributions,” *Phys. Rev. D* 99, no.11, 114006 (2019) [arXiv:1801.05930](#).
- T. Izubuchi, X. Ji, L. Jin, I. W. Stewart and Y. Zhao, “Factorization Theorem Relating Euclidean and Light-Cone Parton Distributions,” *Phys. Rev. D* 98, no.5, 056004 (2018) [arXiv:1801.03917](#).

- J. H. Zhang *et al.* [LP3], “Kaon Distribution Amplitude from Lattice QCD and the Flavor SU(3) Symmetry,” Nucl. Phys. B 939, 429-446 (2019) [arXiv:1712.10025](#).
- T. Ishikawa, [L. Jin](#), H. W. Lin, A. Schäfer, Y. B. Yang, J. H. Zhang and Y. Zhao, “Gaussian-weighted parton quasi-distribution (Lattice Parton Physics Project (LP<sup>3</sup>)),” Sci. China Phys. Mech. Astron. 62, no.9, 991021 (2019) [arXiv:1711.07858](#).
- J. W. Chen *et al.* [LP3], “Symmetry properties of nonlocal quark bilinear operators on a Lattice,” Chin. Phys. C 43, no.10, 103101 (2019) [arXiv:1710.01089](#).
- J. W. Chen, T. Ishikawa, [L. Jin](#), H. W. Lin, Y. B. Yang, J. H. Zhang and Y. Zhao, “Parton distribution function with nonperturbative renormalization from lattice QCD,” Phys. Rev. D 97, no.1, 014505 (2018) [arXiv:1706.01295](#).
- T. Blum, N. Christ, M. Hayakawa, T. Izubuchi, [L. Jin](#), C. Jung and C. Lehner, “Using infinite volume, continuum QED and lattice QCD for the hadronic light-by-light contribution to the muon anomalous magnetic moment,” Phys. Rev. D 96, no.3, 034515 (2017) [arXiv:1705.01067](#).
- J. H. Zhang, J. W. Chen, X. Ji, [L. Jin](#) and H. W. Lin, “Pion Distribution Amplitude from Lattice QCD,” Phys. Rev. D 95, no.9, 094514 (2017) [arXiv:1702.00008](#).
- T. Blum, N. Christ, M. Hayakawa, T. Izubuchi, [L. Jin](#), C. Jung and C. Lehner, “Connected and Leading Disconnected Hadronic Light-by-Light Contribution to the Muon Anomalous Magnetic Moment with a Physical Pion Mass,” **Phys.Rev.Lett.** 118, no.2, 022005 (2017) [arXiv:1610.04603](#).
- T. Blum, P. A. Boyle, T. Izubuchi, [L. Jin](#), A. Jüttner, C. Lehner, K. Maltman, M. Marinkovic, A. Portelli and M. Spraggs, “Calculation of the hadronic vacuum polarization disconnected contribution to the muon anomalous magnetic moment,” **Phys.Rev.Lett.** 116, no.23, 232002 (2016) [arXiv:1512.09054](#).
- T. Blum, N. Christ, M. Hayakawa, T. Izubuchi, [L. Jin](#) and C. Lehner, “Lattice Calculation of Hadronic Light-by-Light Contribution to the Muon Anomalous Magnetic Moment,” Phys. Rev. D 93, no.1, 014503 (2016) [arXiv:1510.07100](#).