

# Xueyue (Sherry) Zhang

Miller Fellow, UC Berkeley

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🌐 <https://xueyue-sherry-zhang.github.io/>

## Research Positions

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<b>Miller postdoctoral fellow, UC Berkeley</b> Advisor: Alp Sipahigil, Chao Family Assistant Professor of EECS and Physics	<b>Mar 2023 - Present</b>
<b>Research assistant, Caltech</b> Advisor: Oskar J. Painter, John G. Braun Professor of Applied Physics	<b>Aug 2017 - Mar 2023</b>
<b>Summer undergraduate research fellow, Caltech</b> Advisor: Kerry J. Vahala, Ted and Ginger Jenkins Professor of Applied Physics	<b>June 2016 - Sept 2016</b>
<b>Undergraduate researcher, Peking University</b> Advisor: Yun-Feng Xiao, Associate Professor of Physics	<b>Jan 2016 - June 2017</b>
<b>Undergraduate researcher, Georgia Tech</b> Advisor: Wenshan Cai, Associate Professor of Electrical and Computer Engineering	<b>Sept 2015 - Dec 2015</b>
<b>Undergraduate researcher, Tsinghua University</b> Advisors: Wei Zhang, Associate Professor of Electronic Engineering. Yu-xi Liu, Professor of Microelectronic Science and Engineering	<b>Sept 2014 - June 2017</b>

## Education

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<b>Ph. D. in Applied Physics</b> California Institute of Technology	<b>Sept 2017 - June 2023</b>
<b>Exchange student in Electrical and Computer Engineering</b> Georgia Institute of Technology	<b>Sept 2015 - Dec 2015</b>
<b>B. Eng. with honor in Microelectronic Science and Engineering</b> Tsinghua University	<b>Sept 2013 - June 2017</b>

## Research Interests

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- **Quantum devices and their applications:** superconducting circuits, color centers in silicon
- **Quantum simulations:** many-body physics, topological physics, quantum optics

## Awards

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<b>Miller research fellowship, UC Berkeley</b>	2023
<b>Boeing Quantum Creator Prize,</b>	2023
<b>Rising star in physics,</b>	2023
<b>Yariv/Blauvelt fellowship, Caltech</b>	2017
<b>Outstanding Graduate, Beijing Ministry of Education</b>	2017
<b>Best undergraduate thesis, Tsinghua University</b>	2017
<b>First place in college entrance exam (1/200,000), Xinjiang Ministry of Education</b>	2013

## Publications

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Up to date list is always available on my Google Scholar page [\[link\]](#).

- “A superconducting quantum simulator based on a photonic-bandgap metamaterial”  
**Xueyue Zhang\*** (\*Equal contribution), Eunjong Kim\*, Daniel K. Mark, Soonwon Choi, Oskar Painter  
*Science* **379**, 6629 (2023)

- “Quantum electrodynamics in a topological waveguide”  
Eunjong Kim\*, **Xueyue Zhang\***, Vinicius S Ferreira, Jash Banker, Joseph K Iverson, Alp Sipahigil, Miguel Bello, Alejandro Gonzalez-Tudela, Mohammad Mirhosseini, Oskar Painter  
*Phys. Rev. X* **11** 1, 011015 (2021)  
Featured in *Physics*
- “Cavity quantum electrodynamics with atom-like mirrors”  
Mohammad Mirhosseini\*, Eunjong Kim\*, **Xueyue Zhang**, Alp Sipahigil, Paul B Dieterle, Andrew J Keller, Ana Asenjo-Garcia, Darrick E Chang, Oskar Painter  
*Nature* **569**, 7758 (2019)
- “Metasurfaces for near-eye augmented reality”  
Shoufeng Lan\*, **Xueyue Zhang\***, Mohammad Taghinejad, Sean Rodrigues, Kyu-Tae Lee, Zhaocheng Liu, Wenshan Cai  
*ACS Photonics* **6**, 4 (2019)
- “Symmetry-breaking-induced nonlinear optics at a microcavity surface”  
**Xueyue Zhang\***, Qi-Tao Cao\*, Zhuo Wang, Yu-xi Liu, Cheng-Wei Qiu, Lan Yang, Qihuang Gong, Yun-Feng Xiao  
*Nature Photonics* **13**, 1 (2019)
- “Single-mode dispersive waves and soliton microcomb dynamics”  
Xu Yi\*, Qi-Fan Yang\*, **Xueyue Zhang\***, Ki Youl Yang, Xinbai Li and Kerry Vahala  
*Nature Communications* **8**, 14869 (2017)
- “A point acoustic device based on aluminum nanowires”  
Qian-Yi Xie\*, Zhen-Yi Ju\*, He Tian, Qing-Tang Xue, Yuan-Quan Chen, Lu-Qi Tao, Mohammad Ali Mohammad, **Xue-Yue Zhang**, Yi Yang and Tian-Ling Ren  
*Nanoscale* **8**, 10 (2016)

## Invited Talks

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- “Interfacing qubits with photons”, Spark talk at Quantum Gathering/NSF site visit, UC Berkeley, August 3, 2023
- “Superconducting Circuit Architectures Based on Light-Matter Interactions”, Columbia University, April 3, 2023
- “A scalable superconducting quantum architecture with long-range connectivity”, QuantumFest, Harvard University, December 15, 2022
- “A scalable superconducting quantum architecture with long-range connectivity”, Special Seminar, Stanford University, September 16, 2022
- “A scalable superconducting quantum architecture with long-range connectivity”, [IQIM Seminar](#), Caltech, September 9, 2022
- “A scalable superconducting quantum architecture with long-range connectivity”, [Joint seminar by HKUST ECE department and IEEE HKED/SSC Joint Chapter](#), September 2, 2022
- “A scalable superconducting quantum architecture with long-range connectivity”, [AMO/QI Seminar](#), UC Berkeley, August 24, 2022
- “A scalable superconducting quantum architecture with long-range connectivity”, Special Seminar, University of Chicago (Prof. Liang Jiang’s group), August 15, 2022
- “A scalable superconducting quantum architecture with long-range connectivity”, Special Seminar, UC Berkeley (Prof. Norman Yao’s group), July 12, 2022
- “Waveguide quantum electrodynamics towards many-body physics”, Institute for Interdisciplinary Information Sciences, Tsinghua University (virtual), May 20, 2022
- “Waveguide quantum electrodynamics with superconducting qubits”, Institute of Computing technology, Chinese Academy of Sciences (virtual), March 30, 2021

## Conference Presentations

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- Lukasz Komza\*, Xueyue Zhang\* (Presenter), Yu-Lung Tang, Zihuai Zhang, Alp Sipahigil, “Reconfigurable photonic crystal cavity arrays for multiplexed spin-photon interfaces in silicon”, APS March Meeting 2024, Minneapolis MN
- Xueyue Zhang, Hanbin Song, Yiyang Zhi, Yu-Lung Tang, Lukasz Komza, Zihuai Zhang, Alp Sipahigil, “Color centers in silicon: an emerging platform to build a quantum repeater node”, QuNeW workshop 2023, Beverly MA
- Xueyue Zhang, Eun Jong Kim, Oskar Painter, “Characterization of a superconducting metamaterial quantum many-body simulator”, APS March Meeting 2022, Chicago IL
- Xueyue Zhang, Eun Jong Kim, Oskar Painter, “A superconducting metamaterial quantum processor for studying quantum many-body physics: Part 1”, APS March Meeting 2021, virtual
- Xueyue Zhang, Eun Jong Kim, Alp Sipahigil, Vinicius Ferreira, Jash Banker, Mohammad Mirhosseini, Oskar Painter, “Quantum electrodynamics in a topological metamaterial: Part 2”, APS March Meeting 2020, virtual
- Xueyue Zhang, Eun Jong Kim, Mohammad Mirhosseini, Alp Sipahigil, Paul Dieterle, Andrew Keller, Ana Asenjo-Garcia, Darrick Chang, Oskar Painter, “Waveguide-mediated interaction of artificial atoms in the strong coupling regime, part 1”, APS March Meeting 2019, Boston MA
- Xueyue Zhang, Eun Jong Kim, Mohammad Mirhosseini, Alp Sipahigil, Andrew Keller, Oskar Painter, “Interaction of a superconducting qubit and an atomic mirror in waveguide quantum electrodynamics”, Gordon Research Conference: Quantum Science 2018, Eaton MA

## Professional Activities

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Reviewer for *Nature Physics*, *Physical Review Letters*, *Physical Review A*, *Physical Review B*, *Scientific Report*

## Teaching and Mentoring

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- **Teaching assistant**, EE/APh 158 Quantum Electrical Circuits. Instructor: Prof. Mohammad Mirhosseini. Caltech 2022.  
Co-developed the course content and homework for the first-run class. Lectured the part on quantum gates. TA rating 4.92/5.
- **Invited teaching**, HSSP summer school: Quantum Information and Technology, MIT 2019
- **Research mentor**, for 6 graduate students and 5 undergraduate students at UC Berkeley and Caltech.

## Outreach and Diversity Activities

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- Invited speaker for a scientific talk with audience of junior and senior undergraduate women\*. Organized by [FUTURE](#) at Caltech, Sept 12, 2022.
- Invited speaker for a lightning talk session (virtual) with hundreds of high school students as the audience. Organized by [QubitByQubit](#), Dec 12, 2021.
- Invited speaker for a scientific talk with audience of junior and senior undergraduate women\*. Organized by [FUTURE](#) at Caltech, Sept 13, 2021.
- Steering committee member, Womxn in EAS, Caltech, Aug 2021 – March 2023.