

# Zheng Shi

Website: <https://zheng-shi.github.io> • Phone: (401) 527-6699 • E-Mail: [erinzhengshi@gmail.com](mailto:erinzhengshi@gmail.com)

## Education History

- 2018 - 2024     Ph.D. in Computer Science, advised by Prof. Felix Heide  
M.A. in Computer Science, while working towards the Ph.D. degree  
*Princeton University, Princeton, NJ, USA*
- 2014 - 2018     Sc.B. in Applied Mathematics, with Honor, Magna Cum Laude  
*Brown University, Providence, RI, USA*

## Academic Honors

- 2018            **Recipient of Rohn Truett Prize**  
Annual award to the most outstanding member of the Applied Mathematics graduating class at Brown University.

## Research Interests

My research focuses on developing task-specific computational imaging systems, designing specialized optics to capture information beyond the range of conventional RGB sensors, without increasing the camera form factor or relying on AI generated content.

## Patents

- 2024            **Generating Super Resolution Images using Duo-Camera Artificial Reality Device**  
**Zheng Shi**, Grace Elizabeth Kuo, Yujia Chen, Daniel Andersen, Chao Li, Richard Andrew Newcombe, Michael Goesele  
*US20240144431A1*

## Publications

- 2024            **Split-Aperture 2-in-1 Computational Cameras**  
**Zheng Shi\***, Ilya Chugunov\*, Mario Bijelic, Geoffroi Côté, Jiwoon Yeom, Qiang Fu, Hadi Amata, Wolfgang Heidrich, Felix Heide  
*SIGGRAPH 2024*
- 2024            **Learned Multi-Aperture Color-Coded Optics for Snapshot Hyperspectral Imaging**  
**Zheng Shi\***, Xiong Dun\*, Siyu Dong, Haoyu Wei, Xinbin Cheng, Felix Heide, Yifan Peng  
*SIGGRAPH Asia 2024*
- 2024            **Collaborative On-Sensor Array Cameras**  
Jipeng Sun, Thomas Eboli, Kaixuan Wei, Jiwoon Yeom, Dongyu Du, **Zheng Shi**, Johannes Froech, Praneeth Chakravarthula, Arka Majumdar, Felix Heide  
*In submission*
- 2024            **Neural Single-Shot GHz FMCW Correlation Imaging**  
Cindy Pan, Noah Walsh, Yuxuan Zhang, **Zheng Shi**, Felix Heide  
*Optics Express (Spotlight on Optics)*
- 2022            **Seeing Through Obstructions with Diffractive Cloaking**  
**Zheng Shi**, Yuval Bahat, Seung-Hwan Baek, Qiang Fu, Hadi Amata, Xiao Li, Praneeth Chakravarthula, Wolfgang Heidrich, Felix Heide  
*SIGGRAPH 2022, poster at ICCP 2022*
- 2021            **Centimeter-Wave Free-Space Time-of-Flight Imaging**  
Seung-Hwan Baek, Noah Walsh, Ilya Chugunov, **Zheng Shi**, Felix Heide  
*ACM Transactions on Graphics (ToG), presented at SIGGRAPH 2022*

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- 2021      **Low-Cost SPAD Sensing for Non-Line-Of-Sight Tracking, Material Classification and Depth Imaging**  
Clara Callenberg, **Zheng Shi**, Felix Heide, Matthias B. Hullin  
*SIGGRAPH 2021*
- 2021      **ZeroScatter: Domain Transfer for Long Distance Imaging and Vision through Scattering Media**  
**Zheng Shi\***, Ethan Tseng\*, Mario Bijelic\*, Werner Ritter, Felix Heide  
*CVPR 2021*

## Industry Experience

- June 2024 -    **AI Research Scientist at Meta Platforms, Inc., Reality Labs**  
Next generation computational cameras for mixed reality devices.
- Summer 2023   **Research Scientist Intern at Meta Platforms, Inc., Reality Labs**  
Co-design on-sensor and post-processing algorithms for energy-efficient cameras tailored for AR glasses.
- Summer 2022   **Research Scientist Intern at Meta Platforms, Inc., Reality Labs**  
Co-design DOE and reconstruction algorithm for miniature cameras used on AR glasses.
- Summer 2017   **Data Scientist Intern at Facebook Search Whole Page Ranking Team**  
Build probabilistic model to improve page ranking algorithm.
- Summer 2016   **Data Analytics Intern at Facebook Core Ads Team**  
Improve the daily budge model accuracy.

## Teaching

- 2019 - 2024    **Graduate Assistant Instructor at Princeton University**
  - COS426: Computer Graphics, *Spring 2021*
  - SML201: Introduction to Data Science, *Fall 2019, Spring 2020, Fall 2020, Fall 2021, Fall 2022 (head TA), Spring 2023 (head TA), Fall 2023 (head TA), Spring 2024 (head TA), and Fall 2024 (head TA)*.
- 2016      **Math Group Tutor for Linear Algebra and Honor Calculus at Brown University**
- 2015      **Grader for Introductory Calculus and Linear Algebra of Brown University**

## Outreach

- 2020      **20K Inspirational Stories Contributor – Día de la Ciencia**

## Services

Reviewer for Springer Virtual Reality, Optics Express, SID, TCI, TPAMI, TVCG, IEEE VR, Eurographics, Siggraph, Siggraph Asia, AAAI, ACCV, ICCV, ECCV, and CVPR.