

# Zheng Shi

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

## Education History

- 2018 - Present    PhD Candidate in Computer Science, advised by Prof. Felix Heide  
Princeton University, Princeton, NJ
- 2014 - 2018      Sc.B. in Applied Mathematics, with Honor, *Magna Cum Laude*  
Brown University, Providence, RI

## Academic Honors

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

## Research Interests:

My research interests are in machine learning for computational photography and computer vision. I am currently working on developing specialized flat optics, such as diffractive optical elements (DOEs) and metalens, with end-to-end optimization methods for downstream vision tasks.

## 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  
*In submission*
- 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  
*In submission*
- 2024              **Neural Single-Shot GHz FMCW Correlation Imaging**  
Cindy Pan, Noah Walsh, Yuxuan Zhang, **Zheng Shi**, Felix Heide  
*In submission*
- 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*
- 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*

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## Experience

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

## Teaching

- 2019 - Now      **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)*.
- 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**

## Service

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

## Skills

Python, TensorFlow, PyTorch, MATLAB, R, SQL, LaTeX, Git