

Zheng Shi

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

Education History

- 2018 - Present Ph.D. Candidate 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 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 computational imaging. I am currently working on augmenting conventional cameras with specialized flat optics, such as diffractive optical elements (DOEs) and metalens, for vision applications such as HDR, hyperspectral imaging, occlusion removal, and depth estimation.

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, SID, TCI, TPAMI, TVCG, IEEE VR, Eurographics, Siggraph, Siggraph Asia, ACCV, ICCV, ECCV, and CVPR.

Skills

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