Zheng Shi

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

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 Truell 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

In submission

2024   **Collaborative On-Sensor Array Cameras**

Jipeng Sun, Thomas Eboli, Kaixuan Wei, Jiwoon Yeom, Dongyu Du, **Zheng Shi**, Johannes Froech, Praneeth Chakravarthula, Arka Majumdarm, Felix Heide

In submission

2024   **Neural Single-Shot GHz FMCW Correlation Imaging**

Cindy Pan, Noah Walsh, Yuxuan Zhang, **Zheng Shi**, Felix Heide

Optics Express

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

Zheng Shi

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

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, ACCV, ICCV, ECCV, and CVPR.