Dongyu Du

Postdoctoral Researcher in Computer Science Department, University of Toronto, Canada

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EXPERIENCE

Postdoc, Computer Science, University of Toronto 2025.03 - Now

- Research area: Single photon imaging,
- Advisor: Prof. David Lindell, Prof. Kyros Kutulakos

EDUCATION

Ph.D., Control Science and Engineering, Tsinghua University 2019.09 - 2024.12

- GPA: 3.99/4 Ranking: 2/101
- Research area: Scattering imaging, Non-line-of-sight imaging, 3D modeling and reconstruction
- Advisor: Prof. Xin Jin

B.Eng., Electronics and Information Engineering, Sichuan University 2015.09 - 2019.06

- GPA: 3.77/4 Ranking: 1/119
- Research area: Intelligent robot control, Embedded system design and development
- Advisor: Prof. Qinggong Guo

Visiting Ph.D. Student, Computer Science, Princeton University 2023.05 - 2024.05

- Research area: Radar imaging, Multimodal data simulation for automatic driving
- Advisor: Prof. Felix Heide

PUBLICATIONS

Academic Papers

- Yihui Fan, **Dongyu Du**, Hongkun Cao, Jiayu Xie, Xin Jin. Atmospheric Scattered Light Field Sampling for Improving Reconstruction Efficiency. IEEE Transactions on Circuits and Systems for Video Technology, (2025).
- Hongkun Cao, Xin Jin, Junjie Wei, Yihui Fan, and **Dongyu Du**. Diffuse light field imaging through thick scattering media. Optics Express 33(3): 5147-5161 (2025).
- Qianyue He, **Dongyu Du**, Haitian Jiang, Xin Jin*. DARTS: Diffusion Approximated Residual Time Sampling for Time-of-flight Rendering in Homogeneous Scattering Media. ACM Transactions on Graphics (TOG) 43: 240 (2024).
- Haozheng Han, XinJin*, **Dongyu Du**. AdWeatherNet: adverse weather denoising with point cloud spatiotemporal attention. In 2024 IEEE International Conference on Visual Communications and Image Processing (VCIP), 1-5 (2024).
- Xin Jin*, **Dongyu Du**, Jiawei Jin, Yihui Fan. Time-of-flight based imaging in strong scattering underwater environments. Optics Express 32(21), 37247--37259 (2024).
- Yuhan Hao, Xin Jin*, **Dongyu Du**. Multi-Dimensional Geometric Feature-Based Calibration Method for LiDAR and Camera Fusion. In 2024 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP), 8406-8410 (2024).
- **Dongyu Du**, Xin Jin*, Rujia Deng. Non-Confocal 3D Reconstruction in Volumetric Scattering Scenario. IEEE Transactions on Computational Imaging 9, 732-744 (2023).

- Rujia Deng, Xin Jin*, **Dongyu Du**, Zhiheng Li. Scan-free time-of-flight-based three-dimensional imaging through a scattering layer. Optics Express 31 (14), 23662-23677 (2023).
- **Dongyu Du**, Xin Jin*, Rujia Deng et al. A Boundary Migration Model for Imaging within Volumetric Scattering Media. Nature Communications 13, 3234 (2022).
- Rujia Deng, Xin Jin*, **Dongyu Du**. 3D Location and Trajectory Reconstruction of a Moving Object Behind Scattering Media. IEEE Transactions on Computational Imaging 8, 371-384 (2022).
- Xin Jin*, **Dongyu Du**, Rujia Deng. Progress and Prospect of Non-Line-of-Sight Imaging (invited). Infrared and Laser Engineering 51(8), 1-26 (2022).
- Xin Jin*, Xiaoyu Wang, **Dongyu Du**, Yihui Fan, Xiangyang Ji. Progress and Prospect of Imaging through Scattering Media (Inner cover paper Invited). Laser & Optoelectronics Progress 58(18), 1811002 (2021).

Patents

- Xin Jin, **Dongyu Du**. A Non-confocal Volumetric Scattering Imaging and 3D Reconstruction Method. Chinese Patents CN202310617506.6 (2023).
- Xin Jin, **Dongyu Du**. A Volumetric Scattering Imaging Method. Chinese Patents CN202210290254.6 (2022).
- Xin Jin, **Dongyu Du**. Scattering Transient Image Acquisition System Design and Transient Image Calibration Method. Chinese Patents CN202210432996.8 (2022).
- Xin Jin, **Dongyu Du**. Estimation Method of the Characteristics of the Scattering Media. Chinese Patents CN202210429477.6 (2022).
- Xin Jin, **Dongyu Du**. Lateral Resolution Calculation Method in Scattering Imaging. Chinese Patents CN202210425679.3 (2022).
- Xin Jin, **Dongyu Du**. A Scattered Light Propagation Modeling Method and 3D Object Reconstruction. Chinese Patents CN202210440123.1 (2022).
- Xin Jin, **Dongyu Du**. A Simulation Method for Transient Imaging in Scattering Scenario. Chinese Patents CN202210285467.X (2022).

AWARDS

Honors

- 2025.02 | **Arts & Science Postdoctoral Fellowship Award**, University of Toronto
- 2024.05 | **ACADEMIC RISING STAR** in SIGS, Tsinghua University
- 2022.06 | **GOLD MEDAL** for 2022 International Exhibition of Inventions of Geneva
- 2019.06 | Outstanding Undergraduate Thesis
- 2019.06 | A-class Certificate for All-round Development of Undergraduate Students in Sichuan Province
- 2018.08 | **NATIONAL FIRST PRIZE** for 2018 National Undergraduate Electronic Design Contest
- 2018.11, 2017.11 & 2016.11 | Outstanding Student of Sichuan University

Scholarships

- 2022.10 | **NATIONAL SCHOLARSHIP** for doctoral student
- 2020.10 | Second-class Scholarship of Tsinghua University
- 2019.06 | “Huizhi Future” Innovation Scholarship
- 2018.12 | “Tanglixin” Outstanding Student Scholarship
- 2018.11 & 2017.11 | **NATIONAL SCHOLARSHIP** for undergraduate student

- 2018.11 & 2016.10 | First-class Scholarship of Sichuan University
- 2017.12 | “Dingliang” Scholarship
- 2016.12 | “Wuliangchun” Outstanding Student Scholarship

OTHERS

Teaching

- 2022.07 – present | Class Adviser Assistant, Ph.D. Class, Tsinghua University
- 2020.09 – 2021.01 | Teaching Assistant, Convex Optimization, Tsinghua University

Professional Skills

- Algorithm and Coding: Matlab, Python, C
- Simulation and Rendering: Mitsuba, UE Engine, Carla
- Embedded System Design: Keil, Altium Designer, Vivado, Labview