

# Kejing Xia

Tel: +1 (404) 267-8037 | E-mail: kxia39@gatech.edu | Address: North Ave NW, Atlanta, GA 30332

## EDUCATION

Georgia Institute of Technology

Atlanta, GA

- **Ph.D. in** Computer Science

Aug. 2025 - Present

Wuhan University

Wuhan

- **B.Eng. in** Communications Engineering (Artificial Intelligence Track)

Sept. 2021 - Jun. 2025

- **GPA: 3.90/4.00, Rank: Top 5%, Wuhan University 1st class Academic Scholarship and Merit Students**

## PUBLICATION

[1] *D<sup>2</sup>GS: Dense Depth Regularization for LiDAR-free Urban Scene Reconstruction*, **accepted by The Thirty-ninth Annual Conference on Neural Information Processing Systems (NeurIPS 2025)**

[2] *LAMB: A Training-Free Method to Enhance the Long-Context Understanding of SSMS via Attention-Guided Token Filtering*, **accepted by The 62nd Annual Meeting of the Association for Computational Linguistics (ACL 2025)**

[3] *LongMamba: Enhancing Mamba's Long-Context Capabilities via Training-Free Receptive Field Enlargement*, **accepted by The Thirteenth International Conference on Learning Representations (ICLR 2025)**

[4] *BRS-E<sup>2</sup>NeRF: Event Enhanced Neural Radiance Fields from Blurry Rolling Shutter Images*, submitted to *The Journal of Pattern Recognition*

[5] *A Spatio-temporal Event Transformer on Versatile Tasks for Human Behavior Analysis*, **accepted by MiGA at The 33rd International Joint Conference on Artificial Intelligence (IJCAI-W 2024)**

## RESEARCH EXPERIENCE

Georgia Institute of Technology, EIC Lab. | Project co-Leader

May. 2024 - Present

*LongMamba: Enhancing Mamba's Long-Context Capabilities via Training-Free Receptive Field Enlargement*

- Discovered unique properties within the Mamba channel: Addressed the long-context challenge in Mamba-based LLMs by channel-wise rearranging hidden states to mitigate the limitations of constrained hidden state memory.

*LAMB: A Training-Free Method to Enhance the Long-Context Understanding of SSMS via Attention-Guided Token Filtering*

- Investigate the attention patterns of Mamba to shed light on why token filtering alleviates long-context degradation, and introduce a training-free method for long context extension driven by attention-guided token filtering in Mamba.

Wuhan University, Signal Processing Lab. | Project co-Leader

Oct. 2023 - Apr. 2024

*BRS-E<sup>2</sup>NeRF: Event-Enhanced Neural Radiation Fields from Blurry Rolling Shutter Images*

- Proposed a single-stage framework capable of reconstructing sharp NeRF from rolling shutter (RS) and blurry images, proposed an innovative event-enhanced re-blurring (EER) module that uses event data to efficiently establish the relationship between clear and blurred images.

University of Oulu, Center for Machine Vision and Signal Analysis (CMVS) | Project Leader

*A Spatio-temporal Event Transformer on Versatile Tasks for Human Behavior Analysis*

Sept. 2023 - May 2024

- Proposed an approach of event-based multi-task Human Behavior Analysis, designed a transformer module for event modal fusion to focus on event frame with global information and event voxel with local temporal information,
- Participated in *IJCAI 2024* at Jeju and gave an oral presentation for the MiGA workshop.

## PROFESSIONAL EXPERIENCE

Bosch Innovation Software Development Co., Ltd | Project Leader

Jul. 2024 – May. 2025

*D<sup>2</sup>GS: Dense Depth Regularization for LiDAR-free Urban Scene Reconstruction*

- Proposed a collaborative optimization method that pairs a diffusion-based depth enhancer with a 3D Gaussian model. By also explicitly constraining the GS components with geometry priors, this approach iteratively improves the scene's geometry, creating dense and accurate depth information iteratively without requiring LiDAR data.

COMPETITION EXPERIENCE

<b>RoboCup China Open   Captain</b> <i>Intelligent Quadruped Rescue Robot</i>	<b>National First Prize</b> Feb. 2024 - May 2024
<b>Student Innovation and Entrepreneurship Project</b> <i>All-in-Focus Seeing Through Occlusions with Event and Frame</i>	<b>National Prize</b> Sept. 2023 - Feb. 2024
<b>China Undergraduate Mathematical Contest in Modeling:</b> <i>Optimization Problem of Survey Line Setting Based on Multibeam Sounding</i>	<b>Hubei Province First Prize</b> Aug. 2023 - Sept. 2023
<b>“Huazhong Cup” Student Mathematical Modeling Challenge:</b> <i>Similarity and Difficulty Assessment Model for Elementary School Application Problems</i>	<b>National First Prize</b> May 2023

AWARDS

• First class Academic Scholarship, Wuhan University	2023 - 2024
• “Luoja” Distinguished Exchange Student Scholarship, Wuhan University	2023 - 2024
• Merit Students, Wuhan University	2021 - 2022, 2023 - 2024
• Merit Academic Scholarship, Wuhan University	2022 - 2023
• Outstanding Student, Wuhan University	2022 - 2023
• Outstanding Exchange Student Scholarship, Wuhan University	2022 - 2023
• Outstanding Academic Scholarship, Wuhan University	2021 - 2022

RESEARCH INTERESTS

**Interests:** Large Language Models, 3D Vision