Kejing Xia

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EDUCATION

Wuhan University (WU) **Wuhan**

Major: Communications Engineering (Artificial Intelligence Track)**, GPA:** 3.90/4.00 Sept. 2021 – Jun. 2025

Related Courses: Signals and Systems(94), Optimization Methods(92), Cognitive Neuropsychology(91), Introduction to Artificial Intelligence(97), Microprocessor and System Design(93), Information theory(95), Machine Learning(91)

Honors: Wuhan University College of Electronic Information 2nd class Scholarship (10%);
Wuhan University College of Electronic Information Merit Students (10%).

National University of Singapore & Nanyang Technological University **Singapore**

Visiting Program in Artificial Intelligence, Machine Learning and Cybersecurity Jul. 2023 – Aug. 2023

PUBLICATION

[1] Huijiao Wang, **Kejing Xia** (co-first author), Yangguang Wang, Chi Zhang, Mingyuan Lin, Lei Yu, *BRS-E^{2}NeRF: Event Enhanced Neural Radiance Fields from Blurry Rolling Shutter Images,* **ACM Multimedia 2024** (under review)

[2] **Kejing Xia**, Lixuan Wei, Lei Yu, *A Spatio-temporal Event Transformer on Versatile Tasks for Human Behavior Analysis,* Micro-gesture Analysis for Hidden Emotion Understanding (**MiGA**) at **IJCAI 2024**

RESEARCH EXPERIENCE

Wuhan University, Signal Processing Lab. | Core Member Jul. 2023 – Present

BRS-E^{2}NeRF: Event-Enhanced Neural Radiation Fields From Blurry Rolling Shutter Images Oct. 2023 – Apr. 2024

- Proposed the first one-stage framework capable of reconstructing sharp neural radiation fields 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.
- Constructed a blurry RS and event datasets with RS effects and motion blur, including events and blurry RS images.
- Wrote a paper named "BRS-E^{2}NeRF: Event Enhanced Neural Radiance Fields from Blurry Rolling Shutter Images".

Paten Project: An Event Camera-Based Eye Movement Data Acquisition Box July. 2023- Oct. 2023

- Participated in the data acquisition process, studied SDKs for commonly used cameras and event cameras, and used Python to write data acquisition scripts that meet individual needs and enable data preprocessing.
- Based on light-sensitive event camera, designed the experimental flows and fabricated the corresponding hardware to improve the robustness of eye movement data extraction by controlling the light and head movement factors.

National Student Innovation and Entrepreneurship Project | Core Member Sept. 2023 – Present

A Brain-like Detection System for Dense Occlusions

- Achieved all-in-focus synthetic aperture imaging by multi-view refocusing, used denoising diffusion model to improve image quality and reduce noise interference, combining the event stream and image to enhance the effect.
- Assembled and constructed an unmanned aerial system by 3D printing, completed the flight and preliminary sampling of data sets. The results of simulated forest scene image reconstruction (PSNR: 21.176, SSIM: 0.748) far exceeded the traditional method, and the target detection accuracy was 99.63%.

Center for Machine Vision and Signal Analysis (CMVS), University of Oulu | Research Assistant

A Spatio-temporal Event Transformer on Versatile Tasks for Human Behavior Analysis (HBA) Sept. 2023 – May 2024

- Proposed the STET method-the first approach for multi-task HBA using events, provided a generic framework for the field, designed a multi-transformer module for event modal fusion.
- Constructed an event HBA dataset and conducted multiple experiments based on this to provide a new benchmark.
- Wrote a paper entitled "A Spatio-temporal Event Transformer on Versatile Tasks for Human Behavior Analysis".

COMPETITION EXPERIENCE

RoboCup China Open **National First Prize**

Intelligent quadruped rescue robot Feb. 2024 – May 2023

China Undergraduate Mathematical Contest in Modeling: **Hubei Province First Prize**

Optimization Problem of Survey Line Setting Based on Multibeam Sounding Aug. 2023 - Sept. 2023

"Huazhong Cup" Student Mathematical Modeling Challenge: **National First Prize**

Bert-eval: Similarity and Difficulty Assessment Model for Elementary School Application Problems May 2023

SKILLS

Skills: Python, C/ C++, MATLAB, Quartus, Keil, Multisim