NUO CHEN

Tel: 646-875-1605 | Email: nc3144@nyu.edu
Personal website: https://nuochen1203.github.io/

EDUCATION

New York University *Sep. 2022 - June 2024*
Master of Science Overall GPA: 3.72/4.00
Major: Computer Engineering
Tandon School of Engineering

Chongqing University *Sep. 2018 - June 2022*
Bachelor of Engineering Overall GPA: 84.89/100
Major: Software Engineering
School of Big Data and Software Engineering

PUBLICATIONS

This is a partial list. For the complete version, please email me to obtain it.

[1] **Nuo Chen**, Jin Xie†, Jing Nie, Jiale Cao, Zhuang Shao, Yanwei Pang, *Attentive Alignment Network for Multispectral Pedestrian Detection*, ***Accepted by ACM MM 2023 (29.3% acceptance rate)***

[2] Yiming Li*, Sihang Li*, Xinhao Liu*, Moonjun Gong*, Kenan Li, **Nuo Chen**, Zijun Wang, Zhiheng Li, Tao Jiang, Fisher Yu, Yue Wang, Hang Zhao, Zhiding Yu, Chen Feng†. "SSCBench: A Large-Scale 3D Semantic Scene Completion Benchmark for Autonomous Driving" *arXiv:2306.09001*.

RESEARCH PROJECTS

VoxFormer-plus: Semantic Scene Completion from 2D Images with Spatio-Temporal Voxel Transformer
AI4CE Lab, New York University *Jul. 2023 – Present*

- Contributed to the enhancement of VoxFormer (CVPR 2023 Spotlight), taking charge of all coding tasks and co-developing the conceptual advancements, successfully raising the benchmark performance from 13.35% to 15.30%.
- Implement a 3D deformable attention ops by CUDA programming, which is already be released in VoxFormer project github page.
- Participate in a novel attention module designing, improving the model performance effectively.
- Implementing temporal alignment fusion module on semantic-kitti dataset to replace the origin voxformer-T solution.
- Conducted related experimental analysis on the Semantic Scene Completion benchmark, and contributed as a co-author to the paper [2].
- This second-authored paper is being written and will be submitted to a top-tier Journal very soon.

Multi-spectral Image Pedestrian Detection based on Deep Learning
undergraduate thesis, Chongqing University *Feb. 2022 – Aug. 2022*

- Executed in-depth research on multispectral pedestrian detection, vital for autonomous driving and surveillance, focusing on feature fusion from RGB and thermal infrared (TIR) images.

- Devised an attentive alignment network to enhance feature integration, with an Attentive Position Alignment (APA) module for region emphasis and modality alignment.
- Developed an Attentive Modality Alignment (AMA) module using a channel-wise attention mechanism guided by illumination to address modality imbalance.
- Conducted comprehensive experiments on KAIST and CVC-14 multispectral detection datasets, achieving performance that exceeds the current state-of-the-art benchmarks.
- First-authored a research paper [1] detailing these findings, accepted by the acclaimed ACM Multimedia (ACM MM) 2023

INTERNSHIP EXPERIENCE

Optical Instrument Software Engineer
Department of Precision Instruments, Tsinghua University *Aug. 2021 – Jan. 2022*

- Based on C#, .NET Framework and OpenGL, developed instrument control and 3D visualization software for optical instruments.
- Visualized 3D light intensity distributions based on data from optical measurements, and created interactive data charts and graphs for users.
- Developed comprehensive instrument control software with modules for process control and hardware interfacing, utilizing asynchronous and multi-threaded programming for effective multitasking.
- Oversaw the entire software development process, including requirements analysis, architecture design, coding, and testing, and produced a complete set of software documentation and intellectual property documents.

SKILLS

Professional Capacities: C/C++, Python, Java, Matlab, OpenGL, .NET, Qt, SQL, PyTorch, TensorFlow, mmdetection, CUDA, LaTeX