

Daitao Xing

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EDUCATION

New York University, Tandon School of Engineering New York, US

Ph.D Candidate, Computer Science 2018-Present

My research interests heavily lie at the intersection of computer vision and Unmanned Aerial Vehicle (UAV) applications. I'm currently dedicated to designing multimodal deep learning methods for real-time visual detection & tracking system, with a primary application on drone and general object tracking, environment perception

New York University, Tandon School of Engineering New York, US

Master of Computer Science 2016-2018

Capstone Project: Web search engine

Developed a small web search engine from scratch and implemented a compact system which consists of web crawling, text acquisition, distributed storage, index creation, query and ranking.

China Minzu University, School of Information Science and Technology Beijing, CN

Bachelor of Science, Information and Computing Science 2011-2015

GPA: 3.87/4

EXPERIENCE

OPPO Research Institute US Palo Alto, US

Computer Vision Research Intern 2022 Summer

- Launched a real-time self-supervised depth estimation framework which utilizes the semantic segmentation to support 3D reconstruction on phones.
- Developed a real-time human instance segmentation method to support human matting on mobile platforms.

Multimedia and Visual Computing Lab New York, US

Research Assistant 2017-2019

- Developed scene text detection from images for automated information retrieval (funded by Here Inc.).
- Build an accurate classifier to distinguish normal and tumor images.
- Created a system with a segmentation network and ZED camera to assist drop-offs activities.
- Developed a deep adversarial network for automated detection of breast cancer metastases in whole-slide images of histological lymph node sections.
- Designed a state-of-the-art method for 3D CT image segmentation on AAPM and Head & Neck datasets.

NYC Data Science Academy New York, US

Data Science Intern 2016-2017

- Worked as RA to support lectures including "Statistic and Machine Learning", "Visualization with R & Python"

Transwarp Technology Shanghai Co Ltd Shanghai, CN

Data Engineer 2014-2016

- Applied statistical analysis and big data management tools to build intelligent market solutions for commercial usage including potential customer identification, fraud detection and intelligent traffic system.
- Built data organization and visualization platforms to assist decision making.

ACTIVITIES

Second prize of UAV Competition Against Fires	Dubrovnik, Croatia, 2022
Second prize of Drone vs Bird Challenge	Lecce, Italy, 2022
First prize of Dubai World Challenge For Self-Driving Transport	Dubai, UAE, 2021
Invited lecture: "YOLO based Object Detection and its application"	NYU Abu Dhabi, UAE, 2021
New York University Abu Dhabi Research Travel Award	NYU Abu Dhabi, UAE, 2021
New York University Abu Dhabi Global PhD Fellowship	2018-2023
New York University Graduate Scholarship	2016-2018
Invited talk on 7th China Statistic and R Conference	Shanghai, CN, 2015

PUBLICATIONS

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1. Xing, D., Shen J., Ho C., & Tzes, A. (2022). ROIFormer: Semantic-Aware Region of Interest Transformer for Efficient Self-Supervised Monocular Depth Estimation. In the Thirty-Seventh AAAI Conference on Artificial Intelligence.
 2. Xing, D., Unlu, H. U., Evangeliou, N., & Tzes, A. (2022). Drone Surveillance Using Detection, Tracking and Classification Techniques. In the *International Conference on Image Analysis and Processing* (pp. 446-457). Springer, Cham.
 3. Coluccia, A., Fascista, A., Schumann, A., Sommer, L., Dimou, A., Zarpalas, D., ... & Pavleski, D. (2022). Drone-vs-Bird Detection Challenge at ICIAP 2021. In *International Conference on Image Analysis and Processing* (pp. 410-421). Springer, Cham.
 4. Xing, D., Evangeliou, N., Tsoukalas, A., & Tzes, A. (2022). A Siamese Network for real-time object tracking on CPU. *Software Impacts*, 12, 100266.
 5. Evangeliou, N., Giakoumidis, N., Chaikalis, D., Tsoukalas, A., Unlu, H. U., Xing, D., & Tzes, A. (2022). Mechatronic Design of a Delivery Octarotor Drone. *International Journal of Mechanical Engineering and Robotics Research*, 11(5), 351-356.
 6. Xing, D., Tsoukalas, A., Evangeliou, N., Giakoumidis, N., & Tzes, A. (2022, June). Siamese Adaptive Transformer Network for Real-Time Aerial Tracking. In *2022 International Conference on Unmanned Aircraft Systems (ICUAS)* (pp. 570-575). IEEE.
 7. Xing, D., Evangeliou, N., Tsoukalas, A., & Tzes, A. (2022). Siamese transformer pyramid networks for real-time UAV tracking. In *Proceedings of the IEEE/CVF Winter Conference on Applications of Computer Vision* (pp. 2139-2148).
 8. Xing, D., Tsoukalas, A., Giakoumidis, N., & Tzes, A. (2021, June). Computationally efficient RGB-t UAV detection and tracking system. In *2021 International Conference on Unmanned Aircraft Systems (ICUAS)* (pp. 1410-1415). IEEE.
 9. Tsoukalas, A., Xing, D., Evangeliou, N., Giakoumidis, N., & Tzes, A. (2021, June). Deep learning assisted visual tracking of evader-UAV. In *2021 International Conference on Unmanned Aircraft Systems (ICUAS)* (pp. 252-257). IEEE.
 10. Xing, D., Li, Z., Chen, X., & Fang, Y. (2017). Arbitext: Arbitrary-oriented text detection in unconstrained scenes. *arXiv preprint arXiv:1711.11249*.

ADDITIONAL INFORMATION

Programming skills: PyTorch, Python, C++, CUDA, ROS, TensorFlow, Docker

Interests: Football, Surfing, Photography, Video Gaming

Language: English, Chinese