

Yizhou Wang

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EDUCATION

UNIVERSITY OF WASHINGTON | PHD IN ELECTRICAL AND COMPUTER ENGINEERING

Expected 2022 | Seattle, WA • GPA: 3.95/4.0

Advised by Professor Jenq-Neng Hwang.

Focus areas: Autonomous Driving, Computer Vision, Deep Learning.

COLUMBIA UNIVERSITY | MS IN ELECTRICAL ENGINEERING

Feb 2018 | New York, NY • GPA: 3.83/4.0

Advised by Professor Shih-Fu Chang and Professor Liangliang Cao.

Focus areas: Computer Vision, Deep Learning.

NORTHWESTERN POLYTECHNICAL UNIVERSITY (NPU) | BENG IN AUTOMATION

Jun 2016 | Xi'an, China • GPA: 91/100 (top 5%)

Graduation Commencement Student Speaker • Honors List • Outstanding Bachelor Thesis and Outstanding Graduates • Outstanding Student and Principal Scholarship (top 0.2%)

RESEARCH EXPERIENCE

INFORMATION PROCESSING LAB | RESEARCH ASSISTANT

Jun 2018 – Present | Seattle, WA

Advised by Prof. Jenq-Neng Hwang.

- Radio object detection (RODNet): Detect and classify objects on road using radar frequency signals purely as the input with vision-radio cross-modal supervision; Built a camera/radar sensor platform and collected a synchronized CRUW dataset including different autonomous driving scenarios.
- Object 3D localization for road scenes: Proposed a system consists of monocular depth estimation, object depth histogram analysis, 3D point cloud clustering, adaptive ground plane estimation, and multi-object tracking.
- Multi-object tracking (MOT): Proposed TrackletNet Tracker (TNT), that aims to build a tracklet graph model and apply a tracklet clustering algorithm, to address multi-object tracking problem for different scenarios.
- Multi-target multi-camera tracking (MTMC): Proposed a accurate and robust framework, involving traffic-aware single camera tracking and trajectory-based camera link model for multi-object tracking cross the multiple camera systems.

DIGITAL VIDEO AND MULTIMEDIA LAB | RESEARCH ASSISTANT

Feb 2017 – Dec 2017 | New York, NY

Advised by Prof. Shih-Fu Chang.

- Temporal action localization (TAL) in videos: 1) Determining whether a video contains specific actions; 2) Identifying temporal boundaries (start & end time) of each action instance.
- Solved TAL problem using Segment-CNN and CDC Networks, and experimented on THUMOS'14 dataset.
- Demo: Developed a web-based visualization demo for Segment-CNN and CDC Networks.

ROBOT SOCCER CENTER @ NPU | PROJECT LEADER & MANAGER

Apr 2013 – Apr 2014 | Xi'an, China

Advised by Prof. Haobin Shi.

- Robot basic action control and optimization, ball prediction, and strategy design.
- Built a robot intelligence system, designed an indoor obstacle avoidance and route planning algorithm using indoor environment modeling.

PUBLICATIONS

- [1] **RODNet: Object Detection under Severe Conditions Using Vision-Radio Cross-Modal Supervision.** Y. Wang, Z. Jiang, X. Gao, J.N. Hwang, G. Xing, H. Liu. *arXiv preprint arXiv:2003.01816*. 2020.
- [2] **Monocular Visual Object 3D Localization in Road Scenes.** Y. Wang, Y.T. Huang, J.N. Hwang. *ACM Multimedia*. 2019.
- [3] **Exploit the Connectivity: Multi-Object Tracking with TrackletNet.** G. Wang, Y. Wang, H. Zhang, R. Gu, J.N. Hwang. *ACM Multimedia*. 2019.
- [4] **Demo: Temporal Action Localization in Untrimmed Videos.** Y. Wang, Z. Shou, S.F. Chang. *NYC Media Lab*. Sep 2017.

- [5] **Multi-Objective Planning Method for Multi-Debris Active Removal Mission in LEO.** Y. Liu, J. Yang, Y.H. HU, M. Zhao, Y. Wang, Q. Pan. *AIAA Guidance, Navigation, and Control Conference*. 2017.
- [6] **Multi-objective optimal preliminary planning of multi-debris active removal mission in LEO.** Y. Liu, J. Yang, Y. Wang, Q. Pan, J. Yuan. *SCIENCE CHINA Information Sciences*. 2016.
- [7] **Multi-objective optimal preliminary planning of multi-debris active removal mission in LEO.** Y. Liu, J. Yang, Y. Wang, Q. Pan, J. Yuan. *IEEE Chinese Guidance, Navigation and Control Conference*. 2016.
- [8] **How to Eradicate Ebola.** Y. Wang, X. Yang, Y. Zhu, L. Wang. *The Journal of Undergraduate Mathematics and Its Applications*. Sep 2015.

WORK EXPERIENCE

HELLO VERA | SOFTWARE ENGINEER

Mar 2018 – Jun 2018 | New York, NY

Advised by Liangliang Cao and James Fan.

- Developed three new channels - SMS, Hangouts, Slack, for our customer service chat-bot “Vera”.
- Set up Jenkins for unit testing and website monitoring.

ENGINEERED STUDIO | SOFTWARE ENGINEER

Jan 2017 – Feb 2017 | New York, NY

Advised by Omar Kiyani.

- Extracted face image and scene image features using Shearlet Transform and Optical-Flow.
- Generated an Autoencoder Neural Network for face images classification and anti-spoofing.

TEACHING EXPERIENCE

- **Columbia ELEN6886** (Spring 2017): Teaching Assistant for *Deep Learning for Computer Vision, Speech, and Language*. Instructed by: Prof. Liangliang Cao, Xiaodong Cui and Kapil Thadani.

HONORS & AWARDS

- ACM Multimedia 2019 **Student Travel Grants**, October 2019.
- CGNCC **Best Paper Finalist** Award, August 2016.
- Graduation Commencement **Student Speaker** at NPU, June 2016.
- **Honors List** and **Outstanding Graduates** at NPU, June 2016.
- **Outstanding Bachelor Thesis** at NPU, June 2016.
- MCM **Outstanding Winner** Award, April 2015.
- **National Scholarship** (top 2%), October 2014 & October 2015.
- **Outstanding Student** and **Principal Scholarship** at NPU (top 0.2%), October 2014.
- The **Champion** in 2014 FIRA World Cup Simulation 5V5 Group, November 2014.
- The **Champion** in the 5th International Robots Olympic Competition FIRA 5V5 Group, August 2014.

PROFESSIONAL SERVICES

- **Conference Reviewer:** NeurIPS, ICML, ICME, ICIP
- **Transaction Reviewer:** IEEE T-PAMI, IEEE T-ITS, IEEE Access, T-CSME

SKILLS & LANGUAGES

PROGRAMMING

Python • C • C++ • Matlab • Shell • \LaTeX • Java • JavaScript • HTML • CSS • SQL

DEEP LEARNING FRAMEWORKS

PyTorch • TensorFlow • Keras • Theano

TOOLS

MS Office • Adobe Photoshop • Adobe After Effects • SolidWorks

LANGUAGES

English • Chinese