Yihan Wang

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EDUCATION

École Polytechnique Fédérale de Lausanne (EPFL), Lausanne, CH
- Master of Civil Engineering (Minor: Computational Science and Engineering) *Sep 2022- Present*
- Relevant Coursework: Deep Learning for Autonomous Vehicles, Machine Learning, Optimization for Machine Learning, C++ Programming in Scientific Computing, Applied Data Analysis

Zhejiang University, Hangzhou, CN
- BSc, Energy and Environment Systems Engineering *Sep 2018 - Jun 2022*
- GPA: 3.91/4.0 (2nd/86)
- Honors/Awards: Zhejiang Provincial Government Scholarship (2019-2020, 2020-2021), First-class scholarship of Zhejiang University (2018-2019; 2019-2020), Honorary title of outstanding student at Zhejiang University (2018-2019, 2019-2020)

RESEARCH EXPERIENCE

ETHz – Computer Vision and Geometry Group (CVG), Zurich, CH *March 2024 - Present*
Research Project: *Beyond Structure-from-Motion with Camera Intrinsics*
- Designed and developed a C++ based incremental Structure-from-Motion (SfM) pipeline which performs 3D reconstruction and camera localization from unordered RGB image set.
- The developed parametrical distortion-free SfM pipeline significantly outperforms the state-of-the-art COLMAP on severely distorted datasets on both 3D point cloud quality and camera pose estimation, highlighting the robustness to radial distortion.
- Tools/Methods: 3D computer vision, Multiple-view geometry, SfM, camera calibration, C++
- Supervisor: Prof. Dr. Marc Pollefeys

EPFL – Visual Intelligence for Transportation (VITA), Lausanne, CH *April 2023 – March 2024*
Semester Project*: Simple Yet Efficient Monocular Lane Detection with Composite Fields*
- Trained a deep neural network for real-time capable detecting lane markers from single RGB image for autonomous vehicle.
- The proposed model addresses the challenge of partial-occlusion for keypoint-based methods, achieving comparable performance with state-of-the-art models on public benchmarks using a simple framework.
- Paper submitted to ECCV 2024.
- Tools/Methods: Computer vision, Deep Learning, CNN, Object Detection, Pose Estimation, Transfer learning, HPC tools
- Supervisor: Prof. Dr. Alexandre Alahi

Zhejiang University, Hangzhou, CN *Aug 2020 - Aug 2021*
Publication: *Tracing the origin of large respiratory droplets by deposition characteristics inside respiratory tract during speech*
- **Yihan Wang**, Jianjian Wei, Caroline X. Gao, Li Liu. *Building Simulation, **16**, 781 – 794 (2023),* orally presented in *IEHB (2021)*
- Investigated into the importance of airborne transmission in the spread of respiratory infectious diseases using computational fluid dynamics based on a realistic human airway model.
- Supervisor: Prof. Jianjian Wei, Zhejiang University

PROJECT

EPFL, Lausanne, CH *Mar 2023 - May 2023*
Course-related Project: *Improving Neural Networks with Zeroth-order and First-order Hybrid Optimization Methods*
- 1st and 0th order optimization methods were implemented and evaluated across various pytorch-based neural network configurations.
- Increased stability found for ZO methods. A hybrid solution was investigated optimizing both computational costs and efficiency.
- Instructor: Prof. Martin Jaggi, Prof. Nicolas Flammarion, EPFL

EPFL, Lausanne, CH *Oct 2023 - Present*
Course-related Project: *Analyzing User Preferences and Naming Impact for Guiding Targeted Recommendation*
- Developed a recommendation system utilizing data from beer review platforms, incorporating numerical ratings and textual reviews.
- Both statistical methods and natural language processing techniques were used for comprehensive recommendation criteria.
- Deployed an interactive webpage telling the data story.
- Instructor: Prof. Robert West, EPFL

LEADERSHIP EXPERIENCE

Qiu Shi Tide, Hangzhou, CN
Director, News and Information Center *Jun 2019 - Jun 2020*
Role as the editor-in-chief as well as journalist. Issued reports cover wide range of topics, including the dilemma surviving Autism, the work condition of Chinese take-out laborers, the consequences resulting from international pandemic policy, etc.

MISCELLANEOUS

- Skills: Computer Vision, Deep Learning, 3D reconstruction, CNN, Python, C++, Pytorch, Tensorflow, Git, Data visualization
- Certificate: Deep Learning Specialization @ coursera https://coursera.org/share/62bc537428f7a9ffc3c121e8fe8549e4
- Language: Mandarin, English