Xiaohan Fei

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Education

University of California, Los Angeles — Fall 2014-present
Ph.D. in Computer Science
Supervisor: Prof. Stefano Soatto
Research Group: UCLA Vision Lab (http://vision.ucla.edu)
GPA: 3.88/4.0

Zhejiang University — Fall 2010-Spring 2014
B.Eng. in Information and Communication Engineering
Major: Information and Communication Engineering
Minor: Advanced honor Class of Engineering Education (ACEE), Chu-Kechen College
GPA: 3.98/4.0(92.35/100)
Title of Undergraduate Thesis: Wide-baseline feature matching for panoramic images
Undergraduate Thesis Supervisor: Prof. Zhiyu Xiang

Research Interests

6 DoF localization, 3-D reconstruction, and semantic scene understanding in multi-sensor settings by leveraging nonlinear filtering, optimization, and learning-based approaches.

Research Experience

NVIDIA Research, Santa Clara, California — Summer 2018
Research Intern
Worked on unsupervised learning of structural representation for 3D objects.

Meta Company, San Mateo, California — Summer 2017
Research Intern
Developed a tightly-coupled visual-inertial SLAM system for Augmented Reality.

University of California, Los Angeles — Fall 2014-present
Graduate Student Researcher
Conducting research activities under the supervision of Prof. S. Soatto. Main projects include: image based re-localization, visual-inertial sensor fusion and object-level (semantic) mapping.

Zhejiang University, China — Fall 2013-Spring 2014
Undergraduate Thesis
Structure from Motion for panoramic video streams from a vehicle-mounted monocular camera.

Awards & Distinctions

2019: Best Paper Award in Robotic Vision, out of 2900 submissions, at ICRA 2019
2013: Meritorious Winner of Mathematical Contest in Modeling (top 15% of 6000 teams worldwide)
2012: National Scholarship (the highest honor for undergraduates in China)

Publications

[1] A. Wong*, X. Fei*, and S. Soatto. VOICED: Depth Completion from Inertial Odometry and Vision. (under review, 2019)

[2] X. Fei, A. Wong, and S. Soatto. Geo-Supervised Visual Depth Prediction. In *International Conference on Robotics and Automation* (ICRA), 2019. (**Best Paper in Robotic Vision**) Also in *IEEE Robotics and Automation Letters* (RA-L).

[3] X. Fei, S. Soatto. Visual-Inertial Object Detection and Mapping. In *European Conference on Computer Vision* (ECCV), 2018.

[4] J. Dong*, X. Fei*, and S. Soatto. Visual-Inertial-Semantic Scene Representation for Object Detection. In *Computer Vision and Pattern Recognition* (CVPR), 2017.

[5] X. Fei, K. Tsotsos, and S. Soatto. A Simple Hierarchical Pooling Data Structure for Loop Closure. In *European Conference on Computer Vision* (ECCV), 2016.

Professional Services

Reviewer of IROS 2019, ICCV 2017 & 2019, and IJMRCAS (International Journal of Medical Robotics and Computer Assisted Surgery).

Talks & Workshops

Inertial-aided Visual Perception for Localization, Mapping, and Detection, at MagicLeap, Microsoft, Facebook 2019.
Visual-Inertial-Semantic Scene Representation, at Bridges to 3D Workshop, CVPR 2017.

TEACHING CS M152A Introductory Digital Design Laboratory, Spring 2018.

RELEVANT COURSEWORK **University of California, Los Angeles:** Machine Perception (Prof. S. Soatto), Convex Optimization (Prof. L. Vandenberghe), Calculus of Variations (Prof. L. Vese), Vision as Bayesian Inference (Prof. A. Yuille), Applied Probability (Prof. Y. Wu), Theoretical Statistics (Prof. A. Amini), Numerical Analysis (Prof. J. Teran), Machine Learning Algorithm (Prof. M. Sarrafzadeh)
Zhejiang University: Computer Vision (Pof. Z. Xiang), Spectral Analysis of Signals (Prof. X. Gong), Information Theory (Prof. Z. Zhang), Mathematical Modeling (Prof. Q. Yang)

RELEVANT SKILLS **Programming Language:** C++, Python, MATLAB, OpenGL, Android
Software Framework: ROS, OpenCV, Eigen, TensorFlow