Xiaohan Fei

E-mail: hzhsfxh@gmail.com Website: https://feixh.github.io

Education

University of California, Los Angeles Sept. 2014 - Sept. 2019
Ph.D. in Computer Science
Advisor: Prof. Stefano Soatto
Research Group: UCLA Vision Lab (http://vision.ucla.edu)
GPA: 3.90/4.0
Title of PhD Thesis: Inertial-aided Visual Perception of Geometry and Semantics

Zhejiang University Sept. 2010 - June 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
Thesis advisor: Prof. Zhiyu Xiang

Open-source Software

XIVO: Xiaohan's Inertial-aided Visual Odometry https://github.com/ucla-vision/xivo
For the rest, see my github page: https://github.com/feixh

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

Surreal team, Facebook Reality Labs, Redmond, Washington Sept. 2019 - present
Research Scientist
Computer vision, AR/VR

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 Sept. 2014 - Sept. 2019
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.

Awards & Distinctions

2019: **Best Paper Award** in Robot Vision, out of 2900 submissions, at ICRA 2019
2013: **Meritorious Winner** of Mathematical Contest in Modeling (top 15% of 6000 teams world-wide)
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. In *International Conference on Robotics and Automation* (ICRA), 2020. Also in *IEEE Robotics and Automation Letters* (RA-L).

[**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 Robot 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 major computer vision (CVPR, ICCV, and ECCV), and robotics (ICRA, IROS) conferences.

Talks & Workshops	*Inertial-aided Visual Perception for Localization, Mapping, and Detection*, at MagicLeap, Microsoft Research, Facebook Reality Labs, 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, PyTorch