

Haofei Kuang

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EDUCATION

M.Sc in Computer Science (Advisor: Prof. Sören Schwertfeger) 2017 - Now
ShanghaiTech University

B.E in Computer Science and Technology 2013 - 2017
Hefei University of Technology

PROJECTS

Depth Estimation on Omni-directional Images (Python, OpenCV, PyTorch)

- Established a Deep Fully Residual Network for predicting a full resolution depth map from a single monocular image.
- Developed a spherical convolution to deal with distortion problems of panoramic images.

Robot Pose Estimation for Panoramic Images (C++, ROS, OpenCV)

- Extracted motion of pixels between two frames via improved Fourier-Mellin invariant (iFMI) algorithm.
- Estimated the full 6 DoF 3D transform, up to an unknown scale factor via fitting the motion of the pixels in the panoramic images to two sinusoidal functions.

INTERN EXPERIENCE

Volunteer 2017
2017 IEEE International Symposium on Safety, Security and Rescue Robotics (SSRR)

Visiting Student 2016
Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences
Projects: Camera Calibration, 3D Reconstruction of Binocular Endoscopic Images

PUBLICATIONS

Haofei Kuang, Qingwen Xu, Xiaoling Long and Sören Schwertfeger. “**Pose Estimation for Omni-directional Cameras using Sinusoid Fitting.**” *Accepted to 2019 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*. IEEE, 2019.

Haofei Kuang, Qingwen Xu, and Sören Schwertfeger. “**Depth Estimation on Underwater Omni-directional Images Using a Deep Neural Network.**” *Workshop on Underwater Robotics Perception, 2019 IEEE International Conference on Robotics and Automation (ICRA)*. IEEE, 2019.

Yuan, Yijun, Haofei Kuang, and Sören Schwertfeger. “**Fast Gaussian Process Occupancy Maps.**” *2018 15th International Conference on Control, Automation, Robotics and Vision (ICARCV)*. IEEE, 2018.

AWARDS

Best Paper 2019
Workshop on Underwater Robotics Perception, 2019 ICRA

8/11 (rank/total) 2019
Rescue Robot League of RoboCup 2019.

Winner (5000\$) 2018
Hackathon of 2018 IEEE ComSoc Summer School on Fog Computing.

Winner (3000RMB) 2017
Autonomous Challenge of 2017 China ROS Summer School.

8/16 (rank/total) 2015
2D Soccer Simulation League of 2015 RoboCup.

First-class prize 2015
2D Soccer Simulation League of 2015 RoboCup China Open.