QI YAN

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EDUCATION

Swiss Federal Institute of Technology, Lausanne (EPFL)   Sep. 2019 - Present
MSc in Mechanical Engineering

Shanghai Jiao Tong University (SJTU), China   Sep. 2015 - June 2019
B.E. in Nuclear Engineering, School of Mechanical Engineering (Honors), GPA: **3.76/4.0**

PUBLICATION

Q. Yan, L. Jiang and S. S. Kia, "Measurement Scheduling for Cooperative Localization in Resource-Constrained Conditions," in *IEEE Robotics and Automation Letters*, vol. 5, no. 2, April 2020. (also selected by ICRA'20 Committee for conference presentation)

Q. Yan, R. Li, and X. Meng. "Tribo-Dynamic Simulation and Motion Control of a Rotating Manipulator Based on the Load and Temperature Dependent Friction", *Proceedings of the Institution of Mechanical Engineers, Part J: Journal of Engineering Tribology*, **conditionally accepted**.

EXPERIENCE

Visual Absolute Localization in *a priori* Known Environment
Master student, EPFL, Switzerland   Feb. 2020 - June 2020
Advisor: *Dr. Iordan Doytchinov*, Laboratory of Geodetic Engineering, EPFL
· Deployed an improved 3D structure-based visual localization pipeline. Achieved an accuracy of ∼10 m & 5 deg in a large synthetic mountainous dataset, comparable to state-of-the-art results.

Droplet Size Estimation Using Deep Learning Method
Undergraduate thesis, Shanghai Jiao Tong University, China   Mar. 2019 - June 2019
Advisor: *Prof. Xiang Chai*, School of Mechanical Engineering, Shanghai Jiao Tong University
· Employed a learning model for semantic segmentation on droplet experiment image. Attained droplet size estimation thereupon with ∼10% uncertainty, close to manual work performance.

Cost-effective Cooperative Localization Algorithm Design
Research student, UC Irvine, USA   Jul. 2018 - Sep. 2019
Advisor: *Prof. Solmaz S. Kia*, Dept. of Mechanical and Aerospace Engineering, UC Irvine
· Proposed a sub-optimal communication free algorithm for NP-hard multi-robot measurement selection problem. Compared against the state-of-the-art method with similar performance, it holds no assumption on system observation and works much faster. Paper accepted by RA-L.

Friction Dynamics Analysis and Control of Manipulator
Research student, Shanghai Jiao Tong University, China   Dec. 2017 - Dec. 2018
Advisor: *Prof. Xianghui Meng*, School of Mechanical Engineering, Shanghai Jiao Tong University
· Carried out tribo-dynamic modeling of a single manipulator joint considering the effects of motor load and temperature. Proposed an improved adaptive terminal sliding mode controller for friction compensation. Paper conditionally accepted by *Journal of Engineering Tribology.*

SKILL

Perception: cooperative localization, Kalman filter, learning-based re-localization
Actuation: kinematic & dynamic analysis, system identification, model predictive control
Software: Python, PyTorch, MATLAB, C++, Java, Solidworks
Languages: Chinese: native; English: proficient (TOEFL-109, GRE-322)