QINGLING DUAN

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PERSONAL SUMMARY

I am eager to learn and continuously improve, committed to honesty, and dedicated to innovation. As a young, dynamic individual with ambitious career goals, I strive for excellence in all that I do.

EDUCATION

University of Chinese Academy of Sciences, China

M.Eng., Computer Technology, 2020.7– 2023.7

Beijing Institute of Technology, China

B.Eng., Computer science and technology, 2016.8 – 2020.7

RESEARCH INTEREST

My research interests lie in the fields of force and tactile Sensors, robotic tactile sensing, and machine learning.

PROJECT EXPERIENCE

Three-Dimensional Force Sensor   2021.2 – 2022.6

- Develop a PyTorch-based deep learning algorithm library to decouple three- dimensional forces under soft conditions.
- By designing experiments verified the effectiveness of the sensor in some application scenarios: force sensitive: water in a plastic bottle (adding water to the bottle several times without slipping), using force feedback control to grasp fragile objects (potato chips, eggs).
- The effect of patterns on the performance of visual 3D force sensors is studied. It is concluded that the effect of pattern on the accuracy of deep learning decoupling forces is negligible.
- By making customized miniature image acquisition equipment, component integration, reducing the size of structural parts and other means, the sensor size was controlled within $1cm^3$ (22cm ×22cm × 22cm). Making it small enough to install at the end of the mechanical gripper.

SKILLS

- Proficiency: Python, PyTorch, C/C++
- Have experience: Java, MATLAB

AWARDS

- The "Shenzhen Division Nomination Award" in the preliminary competition for the "First Cup" Future Technology Innovation Competition   2021
- The S Prize in the Mathematical Contest in Modeling(MCM)   2018
- The scholarship in BIT (Four times)   2017-2019

PUBLICATIONS

- **Qingling Duan**, Qi Zhang, Zhiyuan Liu, and Yongsheng Ou. "Effect of pattern on the resolution of the visual-tactile sensor." *IEEE International Conference on Robotics and Biomimetics (IEEE ROBIO)*, Xishuangbanna, China, Dec. 2022.
- **Qingling Duan**, Qi Zhang, Dong Luo, Ruofan Yang, Chi Zhu, Zhiyuan Liu, and Yongsheng Ou. "Three-Dimensional Force Sensor based on Deep Learning." *1st International Conference on Cognitive Computation and Systems(ICCCS)*, Zhuhai, China, Sep. 2022.

PATENT

- **Qingling Duan**, Yongsheng Ou, Qi Zhang, Zhiyuan Liu, and Guolai Jiang. "The invention relates to a vision-based three-dimensional force detection method, installation and related equipment." Application No.:202310475861.4, Application date: April 25, 2023.