# YINQIANG ZHANG

Grasmeierstrasse 25, 80805 Munich

⋄ Telephone: (49)15223648010 ⋄ Email: yinqiang.zhang@tum.de

⋄ My Website: `https://yinqiangzhang.netlify.app/`

## EDUCATION

- **Technical University of Munich, Munich, Germany** *2018.10 - now*
  M.Sc in Mechatronics and Information Technology
  - GPA Overall: *1.7/1.0(best grade)*
  - **Semester thesis**:
    Title: Computer Assisted Segmentation of Bones Using a Bone Model
    Supervisor: Prof. Dr. Tim C. Lüth (Director of MiMed), Alexandra Mercader (M. Sc.)
- **Tongji University, Shanghai, China** *2013.09 - 2018.06*
  B.Eng. in Mechanical Engineering
  - GPA Overall: *4.64/5.0(best grade)* (equivalent to *91.4/100*)
  - **Bachelor thesis**:
    Title: Visual Object Tracking of Unmanned Aerial Vehicle using Correlation Filter.
    Supervisor: Prof. Dr. Changhong Fu (Director of Vision4Robotics Group)

## RESEARCH INTERESTS

- Aerial Robotics, Machine Learning, Visual Tracking

## PUBLICATION

### Publications

- Yiming Li, Changhong Fu*, Ziyuan Huang, **Yinqiang Zhang**, Jia Pan. *Intermittent Contextual Learning for Keyfilter-Aware UAV Object Tracking Using Deep Convolutional Feature*, IEEE Transactions on Multimedia, 2019. *(JCR Q1, IF = 5.452)*
- Yiming Li, Changhong Fu*, Ziyuan Huang, **Yinqiang Zhang**, Jia Pan. *Keyfilter-Aware Real-Time UAV Object Tracking*, in IEEE International Conference on Robotics and Automation (**ICRA'20**).
- Changhong Fu*, **Yinqiang Zhang**, Ziyuan Huang, Ran Duan, Zongwu Xie. *Part-Based Background-Aware Tracking for UAV with Convolutional Features*, IEEE Access, 2019. *(JCR Q1, IF = 4.098)*
- Changhong Fu*, **Yinqiang Zhang**, Ran Duan, Zongwu Xie. *Robust Scalable Part-Based Visual Tracking for UAV with Background-Aware Correlation Filter*, IEEE International Conference on Robotics and Biomimetics, (**ROBIO'18**) *(Oral presentation)*

### Patents

- Mengru Li*, **Yinqiang Zhang**, Nanjie Xu, Mingdong Li, Shuo Liu *An automated candy vending machine*, CN106127958A.

## SERVICE

Peer Reviewer: International Journal of Machine Learning and Cybernetics (IJMLC)
Peer Reviewer: IEEE International Conference on Robotics and Biomimetic (ROBIO), 2019
Peer Reviewer: IEEE International Conference on Advanced Robotics and Mechatronics (ARM), 2019

## ACTIVITIES AND RESEARCH EXPERIENCES

### Medical Image Processing and Computer Assisted Segmentation     *2019.12 - now*

- Proposed a novel segmentation by registration method, extracted knee model from CT volume.
- Implemented segmentation with MATLAB and the SG-Lib developed by MiMed.
- Assisted in the designs and experiments of bone segmentation methods.

### ZHEJIANG Lab Cup AI International Competition     *2019.08 - 2019.10*

- Designed a multiple object tracking method with a detection-tracking-reidentification framework.
- Combined short and long cues using features from tracking and data association, respectively.
- Incorporated online update mechanism to attune appearance model of Siamese network and implemented MOT framework.

### Developing Robust Aerial Tracking Algorithms     *2017.10 - now*

- Exploited the keyframe technique for mitigating filter corruptions and lowering the redundancy of context learning. Utilized lightweight convolution features to raise the tracking robustness.
- Exploited CNN features and adaptive update mechanism using Gaussian process regression.
- Proposed background-aware using part-based method against partial appearance variation.

### ZEAL Eco-Power Racing Vehicle Team     *2015.03 - 2017.12*

- Equipped Eco-Power car with control and mechatronic systems, managed the team as team leader.
- Applied velocity sensor, dashboard, SD data logger and automatic throttle controller with ARM Cortex-M Microcontroller (programmed with C) and designed PCB board.
- Implemented dashboard software with FreeRTOS embedded operating system.

### National and Shanghai Mechanical Innovation Competition in China     *2016.03 - 2016.07*

- Responsible for the design of an embedded system.
- Designed software to control sensors and actors with CAN bus.
- Completed the communication system between multiple microprocessors.

## SELECTED AWARDS

- **10th place** in ZHEJIANG Lab Cup AI Competition (**233 teams**)     *2019.10*
- **3rd place** in 37th Honda Eco Mileage Challenge, Japan     *2017.10*
- **1st place** in 36th Honda Eco Mileage Challenge, Japan     *2016.10*
- **1st prize** in National College Mechanical Innovation Competition     *2016.07*
- **1st prize** in Tongji Undergraduate Innovation Program     *2016.06*
- **1st prize** in Shanghai College Mechanical Innovation Competition     *2016.05*
- **China National Scholarship**, excellent students of Tongji University     *2015.03*

## INTERNSHIP

### ETAS GmbH, BOSCH R & D Center Headquarters, Shanghai     *2017.11 - 2018.03*

- Responsible for customer outreach and support.
- Designed and completed of interactive program (Python) to parse A2L file.
- Tested rapid prototype module for clients, e.g. ES910 and ES900.

## KEY SKILLS

- **Language**: English: CET-6; German: TestDaF 19/20(R5/5, L5/5, W4/5, S5/5).
- **Programming**: C/C++, Python, MATLAB.
- **Tools**: Robot Operating System(ROS), LaTeX, Citavi, Autodesk Inventor, Pytorch, Linux.