Weijiang Xiong

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EDUCATION

Aalto University, Espoo, Finland 2020/09 - Present
Msc in Robotics and Autonomous Systems, Minor in Machine Learning

- Awarded **Full Aalto Scholarship** during Master's study
- GPA 4.83/5 (30 ECTS) with courses Computer Vision, Bayesian Data Analysis (95), Sensor Fusion, Digital and Optimal Control (98), Distributed Intelligent Automation Systems (92)

Tongji University, Shanghai, China 2015/09 - 2020/07
Bsc in Mechanical Engineering (Specialization: Mechatronics)

- Granted the honor of **Excellent Graduate Student** in Shanghai (top **3%**)
- GPA: 4.58/5.0 (equivalent to 90.8/100); Ranking: 3/114 (top **3%**)
- Seized the **Scholarship for Excellence** in three continuous academic years

PUBLICATION

[1] Changhong Fu, **Weijiang Xiong**, Fuling Lin, and Yufeng Yue. "*Surrounding-Aware Correlation Filter for UAV Tracking with Selective Spatial Regularization*." Signal Processing (2019): 107324. (**First student author**, CAS JCR **Q1**, **Top Journal**, 2018 IF = **4.086** [paper] [video] [code])

[2] Changhong Fu, Yujie He, Fuling Lin, and **Weijiang Xiong**. "*Robust Multi-Kernelized Correlators for UAV Tracking with Adaptive Context Analysis and Dynamic Weighted Filters*." Neural Computing and Applications (2020): 1-17. (CAS JCR **Q2**)

PROJECT EXPERIENCES

LiDAR-Based Object Detection for Autonomous Driving 2020/07 - 2020/08
Algorithm Group in Hesai Technology, Shanghai

- Conducted literature survey on point cloud-based 3D detection and recent state-of-the-arts methods
- Tailored the Waymo Open Dataset and the PCDet point cloud detection framework to suit the project
- Exploited multi-frame fusion and Conv-LSTM for robust 3D object detection with temporal information
- Participated in the road test of Hesai's latest Pandar128 and optimized the toolkit for dense data

Online Collaborative Learning for Multiple UAVs 2018/10 - 2020/06
Research Assistant in Vision4Robotics Group

- Dual Attention Fusion for Tracking, DAFT (Bachelor's Thesis)
  - Proposed a general framework to combine correlation filter (CF) with siamese network (SiamNet)
  - Strengthened the discriminative ability of SiamNet with the response of CF
  - Utilized SiamNet to improve the quality of the CF's training data
  - Obtained significant promotion in precision compared to the baseline trackers
- SASR Tracker for UAV (Paper published on *Signal Processing*)
  - Fused CNN-based features and hand-crafted features to provide diversified object descriptions
  - Enhanced the capability of the algorithm by incorporating surrounding information
  - Redirected the attention of the tracker via selective spatial regularization
  - Leveraged Alternating Direction Method of Multipliers for efficient tracker optimization

Personal Urban Mobility Access (PUMA), PACE Competition 2017/09 - 2018/08
Electronic Group, PACE Vehicle Engineering Center, Tongji University

- Constructed the power supply system for the Portable Electrical Bicycle (PEB)
- Developed an embedded driving control system for realtime cruise control
- Presented the PEB project in the PACE Annual Forum at GM Tech Center at Detroit [video]

SKILLS

Programming	Matlab, Python, C++ (basic)	**MCU**	Arduino, Raspberry Pi
Libraries	PyTorch, OpenCV	**Languages**	Chinese (native), English (C1), Deutsch (B1)