Yi Tian

Research areas

Robotics,
Neuromorphic engineering,
Spiking neural networks,
Event camera,
SLAM

Skills

Deep learning, python,
C++, ROS, pytorch

Contact details

@ ytian@iri.upc.edu
🌐 Personal website
🌐 linkedin.com/in/yi-tian-074967102/
🌐 github.com/yitian97

Personal information

Location: **Barcelona**
Citizenship: **Chinese**
Residence: Long-term working permit
Languages:
- **Chinese** (native)
- **English** (C1)
- **Spanish** (DELE C1)
- **German** (B1)

Working Experience

Researcher   **Jan 2020 – Present**
at *Instituto de Robótica I Informática Industrial (IRI) (Barcelona).*
◇ Developing learning-based motion estimation for event cameras, emphasizing spiking neural networks inspired by brain function.

Research Intern   **Oct 2018 – Jul 2019**
at *Centre Tecnològic de Telecomunicacions de Catalunya (CTTC) (Barcelona).*
◇ Contributed to drone photogrammetry research in Geodesy and Navigation.
◇ Designed and implemented a UAV payload prototype for indoor localization and mapping, integrating visual SLAM and sensor fusion.

Aeronautical Engineer   **Sep 2013 – Sep 2017**
at *Commercial Aircraft Corporation of China Ltd. (COMAC) (Shanghai).*
◇ Conducted maintenance task analysis verification for the C919 airliner.
◇ Supported the continuous airworthiness evaluation for the ARJ-21
◇ Managed suppliers for C919 components.

Education

PhD in Automatic Control, Robotics and Computer Vision
at *Universidad Politécnica de Cataluña (Barcelona).*   **Sep 2020 – May 2025**
◇ Dissertation: Bio-inspired event-driven intelligence for motion estimation.

MSc in Applications and Technologies for Unmanned Aircraft Systems (Drones)
at *Universidad Politécnica de Cataluña (Barcelona).*   **Sep 2018 – Sep 2019**
◇ Project: Development of a UAV payload for indoor mapping and extended uses.

MSc in UE-China economy
at *Universitat Autònoma de Barcelona (Barcelona).*   **Sep 2017 – Jul 2018**
◇ Project: Analysis of the European drone market.

BSc in Aircraft design and engineering
at *Beihang University (Beijing).*   **Sep 2009 – Jun 2013**

Publications

Y. Tian and J. Andrade-Cetto. Spiking Neural Network Transformer for Event-based optical flow estimation, 2025, arXiv preprint arXiv:2409.04082. (under review)[PDF]

Y. Tian and J. Andrade-Cetto. SDformerFlow: Spiking Neural Network Transformer for Event-based Optical Flow, ICPR 2024. Lecture Notes in Computer Science, vol 15315. Springer. [PDF]

Y. Tian and J. Andrade-Cetto. Egomotion from event-based SNN optical flow, ACM ICONS, 2023, Santa Fe, USA, pp. 8:1-8. [PDF]

Y. Tian and J. Andrade-Cetto. Event transformer FlowNet for optical flow estimation, BMVC, 2022, London. [PDF]

Talks

Event-based robot vision
at *IRI 2024 summer school (Barcelona).*   **Jul 2024**

Siking neural network for event camera ego-motion estimation
at *Symposium on Neuromorphic Sensory-Processing-Learning Systems inspired in Computational Neuroscience (Barcelona).*   **Oct 2022**

Other services

Reviewer for journals: RAL, Frontiers in Neurorobotics, PLOS ONE, Neurocomputing, IEEE TAES Reviewer for conferences: ICRA, IROS