RoboSense @ IROS 2025

Workshop & Award Ceremony Agenda

- **Date:** Tuesday, October 21st, 2025
- **Time:** 2:00 P.M. to 6:30 P.M. (local time, UTC+8)
- **Format:** Hybrid (On-Site & Online)
- **Venue:**

  Competition & Exhibition Hall, Hangzhou International Expo Center (HIEC), Hangzhou, China [Map]
- **ZOOM Meeting:**

  https://uci.zoom.us/j/92959725515?pwd=CtdQBhhIOyzT4IEbQgvKBR9hPIwymV.1
  - Meeting ID: 929 5972 5515
  - Passcode: 916561
- **E-Mail:**

  robosense2025@gmail.com
- **Competition Website:**

  https://robosense2025.github.io
- **IROS 2025 Website:**

  http://www.iros25.org

Overview

The 2025 RoboSense Challenge is a premier academic competition affiliated with IROS 2025, designed to advance research in robotics and autonomous systems.

This year's challenge featured five competition tracks across diverse themes including language-guided driving, social navigation, sensor placement, cross-modal drone navigation, as well as cross-platform 3D object detection. A total of 143 teams registered from 85 institutes (66 universities and 19 companies) across 16 countries worldwide, reflecting the global interest and impact of this challenge.

The 2025 RoboSense Challenge Workshop is a dynamic half-day event aimed at fostering discussion and showcasing innovations in robot sensing and related topics. Participants from academia and industry will converge to exchange ideas, present their findings, and celebrate achievements made during this academic competition.

Schedule

This whole workshop costs about **4 hours and 30 minutes**.

- 👤 **Host (On-Site @ IROS 2025):**

Ao Liang (梁奥)	National University of Singapore	[E-mail]
Ronghe Qiu (丘荣河)	HKUST(GZ)	[E-mail]
Tianshuai Hu (胡天帅)	HKUST	[E-mail]
Zeying Gong (龚泽颖)	HKUST(GZ)	[E-mail]

- 👤 **Host (Online @ ZOOM Meeting Room):**

Lingdong Kong (孔令东)	National University of Singapore	[E-mail]
Shaoyuan Xie (谢少远)	University of California, Irvine	[E-mail]

Emergency Contact: Mr. Ao Liang (梁奥)

Phone: (+86) 15271957278 **E-mail:** alanliang1949@gmail.com

Program Overview

(⚠️ All schedules are in Hangzhou local time, UTC+8)

Start	End	Event	Duration
2: 00 P.M.	2: 15 P.M.	Opening Remarks	15 min
2: 15 P.M.	2: 30 P.M.	Spotlight Talk 1	15 min
2: 30 P.M.	3: 00 P.M.	Track Presentations, Track 5	30 min
3: 00 P.M.	3: 30 P.M.	Track Presentations, Track 4	30 min
3: 30 P.M.	4: 00 P.M.	Track Presentations, Track 3	30 min
4: 00 P.M.	4: 15 P.M.	Coffee Break & Networking	15 min
4: 15 P.M.	4: 30 P.M.	Spotlight Talk 2	15 min
4: 30 P.M.	5: 00 P.M.	Track Presentations, Track 2	30 min
5: 00 P.M.	5: 30 P.M.	Track Presentations, Track 1	30 min
5: 30 P.M.	5: 45 P.M.	Coffee Break & Networking	15 min
5: 45 P.M.	5: 55 P.M.	Award Announcement	10 min
5: 55 P.M.	6: 00 P.M.	Closing Remarks	5 min
6: 00 P.M.	6: 30 P.M.	Award Ceremony (On-Site)	30 min

The detailed schedule is planned as follows:

[2:00 PM - 2:15 PM] - Opening Remarks

- Introduction of the 2025 RoboSense Challenge.

  👤 **[Host: Lingdong]** [~ 2 min]
- Introduction of the competition sponsor.

  👤 **[Host: Lingdong]** [~ 1 min]
- Overview of the statistics of the competition and its significance.

  👤 **[Host: Lingdong]** [~ 12 min]

[2:15 PM - 2:30 PM] - Spotlight Talk 1

- Introduction of the speaker.

  👤 **[Host: Lingdong]** [~ 1 min]
- **Title:** "RynnVLA-003: A Unified Vision-Language-Action and World Model"

  Topic: Insight into the evolving landscape of VLA and world models.
- **Speaker:** **Jun Cen** (DAMO Academy, Alibaba Group)

  Bio: Jun is a researcher at DAMO Academy, Alibaba Group, specializing in Vision-Language-Action (VLA) models and World Models. He earned his Ph.D. from the Hong Kong University of Science and Technology (HKUST) in 2024. During his doctoral studies, he was a visiting

student at Nanyang Technological University (NTU) and completed a research internship at Microsoft Research Asia. He has authored numerous top-tier conference papers and garnered over 1,000 stars on GitHub for his projects.

[2:30 PM - 4:00 PM] - Track Presentations, Part 1

- Introduction of the track presentation section.

  👤 [Host: Lingdong] [~ 1 min]

- Each team presentation consists of a **4-minute talk** followed by a **2-minute Q&A**

[2:30 PM - 3:00 PM] - Track 5: Cross-Platform 3D Object Detection

👤 [Host: Ao] [~ 30 min]

- **Team [Visionary]** [Presentation On-Site]

  Youngseok Kim, Sihwan Hwang, and Hyeonjun Jeong

  - **Title:**

    DataEngine: Unified Pre-Training and Viewpoint Normalization for Cross-Platform 3D Object Detection

  - **Affiliations:**

    Visionary Inc., KAIST

- **Team [Point Loom]** [Presentation On-Site]

  Shuangzhi Li, Junlong Shen, Xingyu Li

  - **Title:**

    Robust 3D Object Detection via Physical-Aware Augmentation and Class-Specific Model Ensembling

  - **Affiliations:**

    Department of Electrical and Computer Engineering, U. of Alberta

- **Team [Hunter]** [Presentation On-Site]

  Yongchun Lin, Huitong Yang, Liang Lei, Haoang Li, Xinliang Zhang, Zhiyong Wang, and Xiaofeng Wang

  - **Title:**

    SegSy3D: Segmentation-Guided Self-Training and Model Synergy for Cross-Platform 3D Detection

  - **Affiliations:**

    Guangdong U. of Technology, U. of Queensland, HKUST(GZ), SenseTime

- **Team [TeamArcN]** [Presentation On-Site]

  Shurui Qing, Wei Cong, and Yao He

  - **Title:**

    Unsupervised Domain Adaptation for 3D Object Detection via Adversarial Learning

  - **Affiliations:**

    South China University of Technology

- **Team [DUTLu_group]** [Presentation On-Site]

  Xiyan Feng, Wenbo Zhang, Lu Zhang, Yunzhi Zhuge, Huchuan Lu, and You He

  - **Title:**

    Towards Cross-Platform Generalization: Domain Adaptive 3D Detection with Augmentation and Pseudo-Labeling

  - **Affiliations:**

    Dalian U. of Technology, Tsinghua U.

[3:00 PM - 3:30 PM] - Track 4: Cross-Modal Drone Navigation

👤 [Host: Meng] [~ 30 min]

- **Team [rhao_hur]** [Presentation On-Site]

  Hao Ruan, Jinliang Lin, Zhiming Luo, Yu Zang, and Cheng Wang

  - **Title:**

    HCCM: Hierarchical Cross-Granularity Contrastive and Matching Learning for Natural Language-Guided Drones

  - **Affiliations:**

    Xiamen U.

- **Team [Xiaomi EV-AD VLA]** [Presentation On-Site]

  Lingfeng Zhang, Erjia Xiao, Yuchen Zhang, Haoxiang Fu, Ruibing Hu, Yanbiao Ma, Wenbo Ding, Long Chen, Hangjun Ye, and Xiaoshuai Hao

  - **Title:**

    Caption-Guided Retrieval System for Cross-Modal Drone Navigation

  - **Affiliations:**

    Tsinghua U., HKUST(GZ), Georgia Institute of Technology, National U. of Singapore, CUHK, Gaoling School of Artificial Intelligence, Renmin U. of China

- **Team [TeleAI]** [Presentation On-Site]

  Linfeng Li, Jian Zhao, Zepeng Yang, Yuhang Song, Bojun Lin, Tianle Zhang, Yuchen Yuan, Chi Zhang, and Xuelong Li

  - **Title:**

    A Parameter-Efficient Mixture-of-Experts Framework for Cross-Modal Geo-Localization

  - **Affiliations:**

    TeleAI, China Telecom, East China Normal U., National Tsing Hua U.

[3:30 PM - 4:00 PM] - Track 3: Sensor Placement

[Host: Lingdong] [~ 30 min]

- **Team [Point Loom]** [Presentation On-Site]

  Shuangzhi Li, Junlong Shen, and Xingyu Li

  - **Title:**

    Robust 3D Object Detection under Sensor Placement Variability

  - **Affiliations:**

    U. of Alberta

- **Team [DZT328]** [Presentation On-Site]

  Zihang Wang, Yiming Peng, Guanyu Zong, Xu Li, Binghao Wang, Hao Wei, Yongxin Ma, Yunke Shi, Shuaipeng Liu, and Dong Kong

  - **Title:**

    PlaceRecover: A Transformer-based Point Cloud Recovery Network with Implicit Neural Representations for Robust LiDAR Placement Adaptation

  - **Affiliations:**

    Southeast U., Ruimove.ai, Jiangsu U. of Science and Technology, Zhejiang U., Shandong U., Shandong U. of Science and Technology

- **Team [seu_zwk]** [Presentation On-Site]

  Wenkai Zhu, Wang Xu, Linru Li, Longjie Liao, Jun Yan, Benwu Wang, Xueliang Ren, Xiaoyu Yue, Jixian Zheng, and Jinfeng Wu

  - **Title:**

    Layout-Robust LiDAR 3D Object Detection via Multi-Representation Fusion

  - **Affiliations:**

    Southeast U., Shanghai Jiao Tong U., Nanjing Normal U., Chongqing U., Momenta.ai

- **Team [LRP]** [Presentation Online]

  Dusan Malic, Christian Fruhwirth-Reisinger, (teammate will attend on-site)
  Alexander Prutsch, Wei Lin, Samuel Schulter, and Horst Possegger

  - **Title:**
    GBlobs: Local LiDAR Geometry for Improved Sensor Placement Generalization
  - **Affiliations:**
    Institute of Visual Computing, Graz U. of Technology, Christian Doppler Laboratory for Embedded Machine Learning, Institute for Machine Learning, Johannes Kepler U. Linz, Amazon

- **Team [Smartqiu]** [Video Recording]

  Kexin Xu (friend will attend on-site)

  - **Title:**
    Towards Generalizable 3D Object Detection Across Sensor Placements
  - **Affiliations:**
    U. of Alberta

[4:00 PM - 4:15 PM] - Coffee Break & Networking ☕

👤 [Host: Ao, Tianshuai, Ronghe, Zeying] [~ 15 min]

- Engage with peers, discuss ongoing research projects, and explore potential collaboration opportunities.
- Interactive booths from sponsors showcasing the latest technologies and applications.

[4:15 PM - 4:30 PM] - Spotlight Talk 2

- Introduction of the speaker.
  👤 [Host: Lingdong] [~ 1 min]
- **Title:** "Physical Agent in Autonomous Driving and Manipulation"
  Topic: Insight into the evolving landscape of agent-based autonomous driving.
- **Speaker:** Chonghao Sima (HKU, OpenDriveLab)
  Bio: Chonghao is a third-year Ph.D. candidate at the University of Hong Kong. He has published over 10 papers as first or co-first author at top conferences and journals, such as NeurIPS, CVPR, ICCV, ECCV, and PAMI. His work UniAD received the Best Paper Award

at CVPR 2023. His work BEVFormer was listed among the Top 100 Influential AI Papers of 2022. His work PersFormer and DriveLM were recognized with oral presentation honors at ECCV 2022 and ECCV 2024, respectively. His research has attracted 4,000 citations and his GitHub repositories have accumulated over 5,000 stars.

[4:30 PM - 5:30 PM] - Track Presentations, Part 2

- Introduction of the track presentation section.

  👤 **[Host: Lingdong]** [~ 1 min]

- Each team presentation consists of a **4-minute talk** followed by a **2-minute Q&A**

[4:30 PM - 5:00 PM] - Track 2: Social Navigation

👤 **[Host: Zeying]** [~ 30 min]

- **Team [Xiaomi EV-AD VLA]** [Video Recording]

  Erjia Xiao, Lingfeng Zhang, Yingbo Tang, Hao Cheng, (teammate will attend on-site)
  Renjing Xu, Wenbo Ding, Lei Zhou, Long Chen, Hangjun Ye, and Xiaoshuai Hao

  - **Title:**
    Learning to Navigate Socially Through Proactive Risk Perception
  - **Affiliations:**
    HKUST(GZ), Tsinghua U., Institute of Automation, Chinese Academy of Sciences, Xiaomi EV

- **Team [AutoRobot]** [Presentation On-Site]

  Wenxiang Shi, Jingmeng Zhou, Weijun Zeng, and Zhipeng Zhang

  - **Title:**
    From Imitation to Interaction: A Two-Stage Training Paradigm for Social Navigation
  - **Affiliations:**
    School of Artificial Intelligence, Shanghai Jiao Tong U.

- **Team [Are Ivan]** [Presentation On-Site]

  Zihao Zhang, Yu Zhong, Enzhu Gao, Xinhan Zheng, Xueting Wang, Shouming Li, Yunkai Gao, Siming Lan, Mingfei Han, and Xing Hu

  - **Title:**
    PER-Falcon: Positive-Episode Replay for Future-Aware Social Navigation
  - **Affiliations:**
    Institute of Computing Technology, Chinese Academy of Sciences, U. of Chinese Academy of Sciences, Institute of AI for Industries, U. of Science and Technology of

China, Beijing U. of Technology, BMZUAI

- **Team [CityU-ASL]** [Presentation Online]

  Yang Li, Congfei Li, and Yuxiang Sun (teammate will attend on-site)

  - **Title:**

    Towards Socially Compliant Navigation: Hybrid Parameter Optimization for Falcon in Dynamic Environments

  - **Affiliations:**

    City U. of Hong Kong

- **Team [DUO]** [Presentation On-Site]

  Faduo Liang

  - **Title:**

    Enhancing Robust Social Navigation with Cutout: Handling Human Occlusion in Dynamic Environments

  - **Affiliations:**

    South China U. of Technology

[5:00 PM - 5:30 PM] - Track 1: Driving with Language

👤 [Host: Shaoyuan] [~ 30 min]

- **Team [UCAS-CSU]** [Presentation On-Site]

  Aodi Wu and Xubo Luo

  - **Title:**

    Enhancing Vision-Language Models for Autonomous Driving through Task-Specific Prompting and Spatial Reasoning

  - **Affiliations:**

    U. of Chinese Academy of Sciences

- **Team [UQMM]** [Video Recording]

  Yuxia Fu, Djamahl Etchegaray, and Yadan Luo

  - **Title:**

    Driving Robustly through Corruptions: Multi-Source LoRA Fine-Tuning of Driving VLMs for Multi-View Reasoning

  - **Affiliations:**

    The U. of Queensland

- **Team [CVML]** [Presentation Online]

  Seungjun Yu, Junsung Park, Youngsun Lim, and Hyunjung Shim

  - **Title:**
    Robust Driving QA through Metadata-Grounded Context and Task-Specific Prompts
  - **Affiliations:**
    KAIST

- **Team [TQL]** [Video Recording]

  Jiangpeng Zheng, Ji Ao, Guang Yang, and Siyu Wang

  - **Title:**
    Enhancing Multi-View Driving VLMs via Pseudo-Label Pretraining and Long-Tail Balancing
  - **Affiliations:**
    Tianjin U. of Technology, Independent Researcher

- **Team [AutoRobots]** [Presentation On-Site]

  Hanshi Wang, Xijie Gong, Yixiang Yang, Qianli Ma, and Zhipeng Zhang

  - **Title:**
    Task Aware Prompt Routing and CoT Augmented Fine Tuning for Driving VQA
  - **Affiliations:**
    School of Artificial Intelligence, Shanghai Jiao Tong U.

[5:30 PM - 5:45 PM] - Coffee Break & Networking ☕

👤 **[Host: Ao, Tianshuai, Ronghe, Zeying]** [~ 15 min]

- Engage with peers, discuss ongoing research, and explore collaboration opportunities.
- Interactive booths from sponsors showcasing the latest technologies and applications.
- Prepare for the on-site award ceremony.

[5:45 PM - 5:55 PM] - Award Announcement 🏆

👤 **[Host: Lingdong, Shaoyuan]** [~ 10 min]

- Announcement of the top-5 winners for each track.
- Announcement of the “innovative solutions” winners.
- Announcement of the “best technical report awards” winners.

[5:55 PM - 6:00 PM] - Closing Remarks

👤 **[Host: Lingdong]** [~ 10 min]

- Final thoughts and appreciation for participants and organizers.
- Acknowledgments to the sponsor.
- Announcement of next year's challenge and closing remarks.

[6:00 PM - 6:30 PM] - Award Ceremony (On-Site) 🏆

👤 **[Host: Ao, Tianshuai, Ronghe, Zeying]** [~ 30 min]

- Recognition of the top-5 winners for each track.
- Recognition of the “innovative solutions” winners.
- Recognition of the “best technical report” winners.
- **Photo Session:**
    - Each winning team will be invited on stage to receive their certificate and medal, followed by an official team photo.
    - At the conclusion of the ceremony, all participants, organizers, and attendees will gather for a group photo to commemorate the event.

Awards & Prizes 🏆

This competition consists of **10,000 USD** cash awards in total.

1st Place: Cash 5,000 USD + Certificate

- This award will be given to five awardees
- An amount of **1,000 USD** will be given to each of the five tracks.
- Each team will receive cash, physical certificate, and medal.

2nd Place: Cash 3,000 USD + Certificate

- This award will be given to five awardees
- An amount of **600 USD** will be given to each of the five tracks.
- Each team will receive cash, physical certificate, and medal.

3rd Place: Cash 2,000 USD + Certificate

- This award will be given to five awardees
- An amount of **400 USD** will be given to each of the five tracks.
- Each team will receive cash, physical certificate, and medal.

4th Place: Certificate

- This award will be given to five awardees
- Each team will receive physical certificate and medal.

5th Place: Certificate

- This award will be given to five awardees
- Each team will receive physical certificate and medal.

Innovative Solution Award: Certificate

- This award will be selected by the technical committee and given to three teams.
- Each team will receive physical certificate and medal.

Best Technical Report Award: Certificate

- This award will be selected by the technical committee and given to three teams.
- Each team will receive physical certificate and medal.

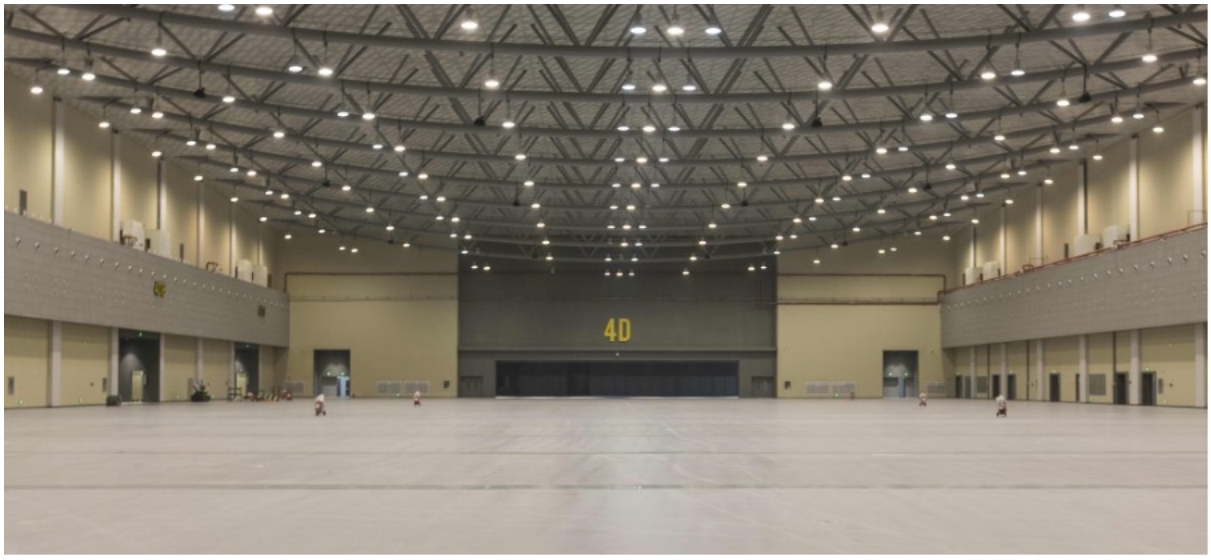
Information about the Venue

Hangzhou International Expo Center (HIEC) [Guide]

Address: 353 Benjing Avenue, Xiaoshan District, Hangzhou City, Zhejiang Province, China.

Located in the south bank of Qiantang River, Hangzhou International Expo Center (HIEC) covers a total floor area of 850,000 square meters. The venue is in a modern simplistic style and also reflects the unique vibe of regions south of the Yangtze River.

By the end of Dec 2023, it had witnessed more than 7,900 conferences and more than 310 exhibitions, HIEC is fully scheduled with strategic cooperation intention for exhibitions. With an exhibition area of over 33 million square meters, G20 Hangzhou Summit Experience Venue had received guests from 48 countries and regions as well as 206 million domestic visitors.



From Local Hangzhou to Conference Venue:

- **Metro:** As Google map can NOT be accessed without VPN, while other electronic maps do not have mature English version. we recommend IOS users to use the iPhone map and Android users to use Petal map for navigation.
- **Bus:** While there is no foreign language service on Hangzhou public buses and most drivers do not speak English, you can use maps and translation apps for navigation. It's also advisable to learn basic Chinese phrases for asking directions.
- **Taxi or Ride-hailing Service:** Hailing a Taxi; Didi Chuxing is China's leading mobile transportation platform, often referred to as China's Uber.

For more information, you could refer to our transportation guide at this link.

IROS 2025 Program Overview

	Sunday (Oct. 19)	Monday (Oct. 20)		Tuesday (Oct. 21)		Wednesday (Oct. 22)		Thursday (Oct. 23)		Friday (Oct. 24)	Saturday (Oct. 25)
Morning		Workshops & Tutorials	8:30-9:00	Opening Ceremony						Workshops & Tutorials	RAS AdCom Meeting (Invitation Only)
			9:00-10:00	Plenary Talk		Plenary Talk		Plenary Talk			
			Coffee Break	Technical Session & Keynote Session	Competition & Exhibition & Forum	Technical Session & Keynote Session	Competition & Exhibition & Forum	Technical Session & Keynote Session	Competition & Exhibition & Forum		
			10:30-11:50								
Noon	IROS Steering Committee Meeting (Invitation Only)	Full Day 9:00-17:00 AM 9:00-13:00 PM 13:00-17:00 Coffee Break 10:30-11:00 15:00-15:30	11:50-13:20	Lunch		Lunch		Awards Lunch		Full Day: 9:00-17:00 AM 9:00-13:00 PM 13:00-17:00 Coffee Break 10:30-11:00 15:00-15:30	
Afternoon			13:20-14:40	Technical Session & Keynote Session		Technical Session & Keynote Session		Technical Session & Keynote Session			
			Coffee Break								
			15:00-16:20								
			Coffee Break								
			16:40-18:00								
Evening		Welcome Reception		OC & VIP Dinner		Banquet		Farewell Party			