

2025 International Conference on Robotic Computing and Communication (RoboticCC 2025)

**Naples, Italy
8-10 December 2025**

IEEE Catalog Number: CFP258AD-POD
ISBN: 979-8-3315-4966-4



Copyright © 2025, IEEE

All Rights Reserved

Copyright and Reprint Permissions:

Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. All rights reserved.

*** This is a print representation of what appears in the IEEE Digital Library. Some format issues inherent in the e-media version may also appear in this print version.

IEEE Catalog Number:	CFP258AD-POD
ISBN (Print-On-Demand):	979-8-3315-4966-4
ISBN (Online):	979-8-3315-4965-7

Additional Copies of This Publication Are Available From:

Curran Associates, Inc
57 Morehouse Lane
Red Hook, NY 12571 USA

Phone:	(845) 758-0400
Fax:	(845) 758-2633
E-mail:	curran@proceedings.com
Web:	www.proceedings.com

TABLE OF CONTENTS

Eyes on Me: Decoupling Perception from Action in Robotic Manipulation with an Active Observer	1
<i>Chen Hu, Hanchi Ren, Xianghua Xie</i>	
Smart Object Detection in Complex Environments Via Machine Learning for Robotic Vision	9
<i>Israr Akhter, Martin Dekan, Frantisek Duchon</i>	
Modelling Robot Navigation Recovery Policies from Non-Expert Users' Demonstrations In-The-Wild	15
<i>Ahmad Faris, Ayse Kucukyilmaz, Athanasios Polydoros, Francesco Del Duchi</i>	
Spectral Signature Mapping from RGB Imagery for Terrain-Aware Navigation	23
<i>Sarvesh Prajapati, Ananya Trivedi, Nathaniel Hanson, Bruce Maxwell, Taşkın Padır</i>	
A Route Planning Approach with RAG-based LLM and FAISS for Robotic Guide	31
<i>Alessandro Pio, Fabio Persia, Giovanni Pilato, Daniela D'Auria, Mouzhi Ge</i>	
Annotation of Tomato Plants RGB-D Images via Point-to-Pixel Label Transfer	38
<i>Alessio Sacchi, Riccardo Monica, Dario Lodi Rizzini, Stefano Caselli</i>	
The Equivalence of Behavior Trees and Labelled Transition Systems in Representation of Robot Teleoperation Tasks	43
<i>Mohamed Behery, Gerhard Lakemeyer</i>	
Pose Estimation of an Industrial Pallet of Packaged Paper Rolls from a Depth Image	47
<i>Riccardo Monica, Jacopo Aleotti</i>	
Bottlenecks of Vision Language Models in Image to PDDL State Extraction	52
<i>Gaëlic Bechu, Ehsan Abbasnejad, Mihai Andries, Panagiotis Papadakis</i>	
A Virtual Reality-Based Learning Environment for Human—Robot Collaboration Training in Construction 4.0	54
<i>Khadija Sabiri, Luís Afonso, Caio Camargo, Estefânia Gonçalves, Rui Fernandes</i>	
On Anomaly Management in Mobile Robot Systems in Intralogistics	62
<i>Natalia Ogorelysheva, Till Schallau, Dominik Schmid, Mario Günzel, Falk Howar, Jian-Jia Chen Julia Freytag, Jan Emmerich</i>	
ROSBAG MCP Server: Analyzing Robot Data with LLMs for Agentic Embodied AI Applications	70
<i>Lei Fu, Sahar Salimpour, Leonardo Militano, Harry Edelman, Jorge Peña Queralta, Giovanni Toffetti</i>	
Chromagram-Based Machine Learning for Acoustic Analysis in Manufacturing	78
<i>Kalpna Algotar, Rita Chattopadhyay, Srividya Bansal, Ajay Bansal</i>	
Adaptive Thresholding for Visual Place Recognition Using Negative Gaussian Mixture Statistics	86
<i>Nick Trinh, Damian Lyons</i>	
Drone Sound Classification Technique Using Transfer Learning: A Novel Approach	90
<i>Kalpna Algotar, Rita Chattopadhyay, Srividya Bansal, Ajay Bansal</i>	
Recognizing Robotic Components in Complex Environment	92
<i>Hanchi Ren, Yiming Li, Yuning Wang, Nurhan Bulus Guran, Chen Hu, Yue Yang, Yueyue Hu, Junyan Hu Jingjing Deng, Xianghua Xie</i>	

Stranded Human Detection in Flooded Environments From UAV Imagery	100
<i>Meet Arvindbhai Monpara, Md Maklachur Rahman, Tauhidul Alam, Jiangjiang Liu, Jing Zhang</i>	
AAO-Grasp: Diffusion-Enhanced Object-Level Grasp All at Once	108
<i>Yiming Li, Hanchi Ren, Yue Yang, Xianghua Xie</i>	
Mass Estimation Using Supervised Learning with a Tactile Robotic Hand	112
<i>Manikandan Cheruvary, Nathan F. Lepora, Max Yang</i>	
A Distributed Drone Weather System Using LoRaWAN and LoRa Meshnet	119
<i>Hongkwon Kim, Jiho Pyo, Jeongyeon Park, Jesung Park, Jennifer Wu, Anthony H. Smith</i>	
Wildlife Detection via 40kHz Ultrasonic Signals: Dataset Design and Deep Learning Evaluation	127
<i>Seungeun Kang, Hyeonuk Kang, Sanghyeon Ahn, Taeyun Ahn, Lawrence Hiday, Anthony H. Smith</i>	
IL-SLAM: Intelligent Line-assisted SLAM Based on Feature Awareness for Dynamic Environments	135
<i>Haolan Zhang, Thanh Nguyen Canh, Chenghao Li, Ruidong Yang, Yonghoon Ji, Nak Young Chong</i>	
A Hybrid Architecture for Scene Understanding and Event Prediction in Aviation	141
<i>Alec Waumans, Gabriella Gigante, Domenico Pascarella, Mohamed Laid Hadjili</i>	