ZENGYANG PAN

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EDUCATION

Imperial College London, London, UK 2015 - 2019
M.Eng. (B.Eng. Integrated) in Electrical and Electronic Engineering | First Class Honors
Thesis: Robot Manipulation of Shoelaces
Advisors: Yiannis Demiris & Tae-Kyun Kim

RESEARCH INTERESTS

Robotics, Machine Learning, Autonomous Systems

PROFESSIONAL EXPERIENCE

XYZ Robotics, Shanghai, China Jan. 2021 - present
Technical Lead, Mixed-Case Palletizing Robot

- Developed heuristic and learning-based 3D bin packing algorithms for both offline and online palletizing scenarios; ranked top 3 globally in the ICRA Stacking Challenge 2023.
- Led system design, software iteration, testing, and deployment of both fixed-base and mobile mixed-case palletizing robots; delivered systems to 10+ industrial clients worldwide.

Technical Lead, Piece-Picking Robot

- Led the R&D of piece-picking robots, with a focus on visual detection of novel objects, task planning, and intelligent EOAT design; delivered 20+ robotic systems.

YITU Technology, Shanghai, China Nov. 2019 - Dec. 2020
AI Research Engineer

- Developed AutoML and implemented multiple AI models for public security applications, specializing in target tracking, detection, matching, and classification.

RESEARCH EXPERIENCE

Personal Robotics Lab, Imperial College 2019
Graduate Student Researcher Advisor: Yiannis Demiris

- Robot manipulation of deformable objects, focusing on the shoelace threading application.

Robot Intelligence Lab, Imperial College 2018
Undergraduate Research Assistant Advisor: Petar Kormushev

- Remote locomotion control for wheeled and quadrupedal robots.

HONORS & AWARDS

IEEE ICRA Virtual Manipulation Challenge: Stacking | Top 3 2023
Cisco Switch-Up Challenge | Top 2 2016

TEACHING EXPERIENCE

Undergraduate Teaching Assistant, Control Engineering, Imperial College 2018
Undergraduate Teaching Assistant, Power Engineering, Imperial College 2018

SKILLS

Tools: TensorFlow, PyTorch, ROS, Docker, Git, PyBullet, CI/CD
Programming: Python, C++, Bash, HTML

PATENTS

1. C.N. Patent 119141509A, “Robot for Neatly Arranging Objects in Bins,” Dec. 17, 2024
2. C.N. Patent 119142585A, “System for Placing Items Neatly into Bins,” Dec. 17, 2024
3. C.N. Patent 118682717A, “Piece-Picking Robot with Bin-Side Positioning Feature,” Sep. 24, 2024
4. C.N. Patent 118691679A, “Method, Device, Equipment, and Storage Medium for Bin-Side Positioning,” Sep. 24, 2024
5. C.N. Patent 118691678A, “Vision-Based Bin-Side Positioning System,” Sep. 24, 2024
6. C.N. Patent 118618911A, “Mixed-Case Palletizing Robot and Pattern Planning System with Barcode Orientation Constraints,” Sep. 10, 2024
7. C.N. Patent 118628017A, “Method, Device, Equipment, and Storage Medium for Offline Mixed-Case Palletizing Pattern Planning,” Sep. 10, 2024
8. C.N. Patent 118617400A, “Offline Mixed-Case Palletizing Pattern Planning System and Robot,” Sep. 10, 2024
9. C.N. Patent 118617398A, “Method, Device, Equipment, and Storage Medium for Mixed-Case Palletizing Pattern Planning with Barcode Orientation Constraints,” Sep. 10, 2024
10. C.N. Patent 118115575A, “Pose Recognition System for Multi-Contour Objects,” May 31, 2024
11. C.N. Patent 118115568A, “Method, Device, Equipment, and Storage Medium for Multi-Contour Object Pose Recognition,” May 31, 2024
12. C.N. Patent 116452656A/B, “Method, Device, Equipment, and Storage Medium for Neatly Placing Objects in Bins,” Nov. 28, 2023
13. C.N. Patent 116704003A, “Method, System, Equipment, and Storage Medium for Multi-Picking Detection,” Sep. 05, 2023
14. C.N. Patent 217703453U, “Piece-Picking Robot with a Multi-Picking Detection Feature,” Nov. 01, 2022