# Yik Lung Pang

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## EXPERIENCE

- **Research Assistant** — London, UK
  *Queen Mary University of London* — *Apr 2025 - Present*
  - Performed research in vision-language model based referring expression segmentation. Developed a training-free method by prompting the model to retrieve additional visual and textual context to guide the detection process. Improved detection accuracy@0.7IoU of existing model by 40%.
  - Designed data collection pipeline for collecting first person view image dataset using Gaussian Splatting for human-to-robot handover applications. Trained end-to-end action policy on the collected data achieving 3× success rate improvement over baseline on human-to-robot handover of household objects.

- **Research Intern** — Martigny, Switzerland
  *Idiap Research Institute* — *Jun 2023 - Dec 2023*
  - Developed method for reconstruction of hand and object shape represented as signed distance field (SDF) from sparse multi-view RGB images of humans holding everyday objects. Achieved over 50% reduction in object reconstruction error compared to previous methods. Integrated our reconstruction method into a robot control pipeline in ROS for real-time image-guided human-to-robot handovers for household objects (including transparent objects) achieving over 30% improvement in grasping success rate compared to previous methods.

- **Research Assistant** — London, UK
  *Queen Mary University of London* — *Jan 2020 - Apr 2020*
  - Built tool for visualising estimated object centroid trajectories in 3D using Kalman filter with RViz and ROS. Developed UR5 grasping simulation environment in Gazebo.
  - Built simulation tool for human-to-robot handover in PyBullet. Organised the CORSMAL challenge on audio-visual object classification for human-robot collaboration at IEEE International Conference on Acoustics, Speech, and Signal Processing which utilised the simulation tool to evaluate perception models submitted by 8 teams with over 30 participants in total.

- **Software Engineer** — London, UK
  *Gentrack* — *Jan 2016 - Sep 2018*
  - Part of an agile development team that analyses market changes and develops billing and customer care software for electricity and gas suppliers. Participated in solution design, implementation, unit testing, manual testing and documentation. Carried out data migration tasks in Oracle SQL and MS SQL. Trained new users on-site during implementation projects.

## SKILLS

- **Programming:** Python, C++
- **Libraries:** PyTorch, OpenCV, PyBullet, ROS, MoveIt!, Gazebo, Point Cloud Library, Open3D, Trimesh
- **Languages:** English, Chinese

## EDUCATION

- **PhD Computer Science** — London, UK
  *Queen Mary University of London* — *Apr 2020 - Mar 2025*
  *Topics: Human-to-robot object handover, hand-object shape reconstruction*

- **MSc Artificial Intelligence** — London, UK
  *Queen Mary University of London* — *Sep 2018 - Sep 2019*

- **BSc Physics** — London, UK
  *Imperial College London* — *Sep 2012 - Jun 2015*

## PUBLICATIONS

- Zhu, C., Wang, H., **Pang, Y.L.** and Oh, C., "LaVA-Man: Learning Visual Action Representations for Robot Manipulation.", Conference on Robot Learning (CoRL), 2025

- Wu, Y., **Pang, Y.L.**, Cavallaro, A. and Oh, C., "Learning human-to-robot handovers through 3D scene reconstruction.", IEEE International Symposium on Robot and Human Interactive Communication (RO-MAN), 2025 [Webpage]

- **Pang, Y.L.**, Xompero, A., Oh, C. and Cavallaro, A., "Stereo hand-object reconstruction for human-to-robot handover", IEEE Robotics and Automation Letters (RA-L), 2025 [Webpage]

- Tian, L., Sorrenti, A., **Pang, Y.L.**, Bellitto, G., Palazzo, S., Spampinato, C. and Oh, C., "Incremental Object 6D Pose Estimation", International Conference on Pattern Recognition (ICPR), 2024 [Webpage]

- **Pang, Y.L.**, Oh, C. and Cavallaro, A., "Sparse multi-view hand-object reconstruction for unseen environments", IEEE/CVF Conference on Computer Vision and Pattern Recognition Workshop (CVPRW), 2024

- Xompero, A., **Pang, Y.L.**, Patten, T., Prabhakar, A., Calli, B. and Cavallaro, A., "Audio-Visual Object Classification for Human-Robot Collaboration", IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP), 2022 [Webpage]

- **Pang, Y.L.**, Xompero, A., Oh, C. and Cavallaro, A., "Towards safe human-to-robot handovers of unknown containers", IEEE International Conference on Robot & Human Interactive Communication (RO-MAN), 2021 [Webpage]

- Oh, C., **Pang, Y.L.** and Cavallaro, A., "OHPL: One-shot Hand-eye Policy Learner", IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), 2021 [Webpage]

## AWARDS

- Placed 1st in London Robotics & AI Summer Mini-School Hackathon 2023

- Placed 2nd in QMUL-BUPT Design & Build Winter Hack 2019

## TEACHING

- Demonstrator for ECS709 - Introduction to Computer Vision (2021/2022)