6th UK Manipulation Workshop

7th-8th January 2025

King's College London

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Programme

Day 1 - Tuesday 7z January 2025		
09:00	Registration / Coffee & Tea	TBC
09:45	Welcome and Introduction	TBC
10:00-11:00	**Session 1** R**obot Gripper and Manipulator Design** - Chair: Matthew Howard	TBC
	10:00: **Ketao Zhang – Queen Mary University of London** *A talk on the amazing work of this speaker*	
	10:15: **Rustam Stolkin – University of Birmingham** *A talk on the amazing work of this speaker*	
	10:30: **Nicola Bailey - King's College London** *A talk on the amazing work of this speaker*	
	10:45: **Nathan Lepora - University of Bristol** *A talk on the amazing work of this speaker*	
11:00	Poster spotlights / Coffee Break	TBC
11:30-12:30	**Keynote – Demis Hassabis/Francesco Nori (TBD)** - DeepMind *A talk on the amazing work of this speaker*	TBC
12:30	Lunch	TBC
13:30-14:30	*Optional* Lab tour *Optional* Alternative option	TBC
14:30	Poster spotlights / Coffee Break	TBC
15:00-16:00	**Session 2 - Robot Learning and Control for Manipulation** - Chair: Shan Luo	TBC
	15:00: **Luis Figueredo - University of Nottingham** *A talk on the amazing work of this speaker*	
	15:15: **Joao Bimbo - University of Lisbon** *A talk on the amazing work of this speaker*	
	15:30: **Ed Johns – Imperial College** *A talk on the amazing work of this speaker*	
	15:45: **Hyung Jin Chang – University of Birmingham** *A talk on the amazing work of this speaker*	
	16:00: **Maria Bauza Villalonga - DeepMind** *A talk on the amazing work of this speaker*	
	16:15: **Mohan Sridharan – University of Edinburgh** *A talk on the amazing work of this speaker*	
16:30-17:00	**Funder F.1/Tutorial** on Knowledge Transfer - TBD *A talk on the funds available from this organisation*	TBC

Day 2 – Wednesday 8 January 2025		
09:00	Registration / Coffee & Tea	Reception
09:30 – 10:30	**Session 3** - Chair: XXX	TBC
	09:30: **Dandan Zhang - Imperial College** *A talk on the amazing work of this speaker*	
	09:45: **Lorenzo Jamone - Queen Mary University of London** *A talk on the amazing work of this speaker*	
	10:00: **Mehmet Dogar - University of Leeds** *A talk on the amazing work of this speaker*	
	10:15: **Efi Psomopoulou – University of Bristol** *A talk on the amazing work of this speaker*	
10:30	Poster spotlights / Coffee Break	TBC
11:00 – 12:00	**Robert D. Howe – Havard University** *A talk on the amazing work of this speaker*	TBC
12:00 – 13:00	Lunch / Inclusive Futures Forum facilitated by Women in Robotics (Lunch incl) *Women in Robotics is a global community supporting women who work in robotics and women who are interested in working in robotics, as entrepreneurs, industry and academia.*	TBC
13:00 - 15:00	*Optional* Lab tour *Optional* Alternative option	TBC
15:00	Poster spotlights / Coffee Break	TBC
15:30 - 16:30	**Session 4** Industrial Manipulation - Chair: XXX	TBC
	15:30: **Rich Walker – Shadow Robot** *A talk on the amazing work of this speaker*	
	15:45: **Jelizaveta Konstantinova - Ocado Technology** *A talk on the amazing work of this speaker*	
	16:00: **Amir Bastan - KUKA** *A talk on the amazing work of this speaker*	
	16:15: **Tom Erez - DeepMind** *A talk on the amazing work of this speaker*	
16:30- 17:30	**Discussion** Followed by Awards and closing remarks	TBC

Posters Schedule

Day 1

#1	**A Proxy-Tactile Reactive Control for Robots Moving in Clutter** Giammarco Caroleo, *University of Oxford*
#2	**NeuralTouch: Leveraging Implicit Neural Descriptor for Precise Sim-to-Real Tactile Robot Control** Yijiong Lin*, University of Bristol*
#3	**Online state vector reduction during model predictive control with gradient-based trajectory optimisation** David Russell, *University of Leeds*
#4	**RoTipBot: Robotic Handling of Thin and Flexible Objects using Rotatable Tactile Sensors** Jiaqi Jiang, *King's College London*
#5	**One-shot Dual-arm Imitation Learning** Yilong Wang, *Imperial College London*
#6	**Adaptive Power-Shaping-Signal Variable Impedance Control of Articulated-Soft Robots for Compliant Interaction** Emmanouil Spyrakos, *King's College London*
#7	**FOTS: A Fast Optical Tactile Simulator for Sim2Real Learning of Tactile-Motor Robot Manipulation Skills** Yongqiang Zhao, King's College London
#8	**Soft Robot Employing a Series of Pneumatic Actuators and Distributed Balloons: Modeling, Evaluation, and Applications** Tuan Nguyen, *Japan Advanced Institute of Science and Technology (JAIST)*
#9	**Tactile SoftHand-A: 3D-Printed, Tactile, Highly-underactuated, Anthropomorphic Robot Hand with an Antagonistic Tendon Mechanism** Haoran Li, *University of Bristol*
#10	**ConViTac: Aligning Visual-Tactile Fusion with Contrastive Representations** Zhiyuan Wu, *King's College London*
#11	**Comprehensive Evaluation of Grasp Planners: Addressing the Sim-to-Real Gap in Robotic Manipulation** Jose Alex Chandy, U*niversity of Nottingham*
#12	**Sample-efficient intrinsically motivated manipulation learning using novelty and visual attention** Maciej Przybylski, *Politechnika Warszawska*
#13	**Developing a Robotic Surgery Training System for Wide Accessibility and Research** Walid Shaker, *Heriot Watt University*
#14	**MILES: Making Imitation Learning Easy with Self-Supervision** Georgios Papagiannis, *Imperial College London*
#15	**Electrical Impedance Tomography Based Finger-shaped Soft Artificial Skin** Yunqi Huang, *University College London*

#16	**D-CUBED: Latent Diffusion Trajectory Optimisation for Dexterous Deformable Manipulation** Jun Yamada, *University of Oxford*
#17	**Few-shot Learning From Observation in Robotic Manipulation: A Preliminary Investigation** Adrian Vecina Tercero, *University of Nottingham*
#18	**Continuous Mobile Manipulator Performance Measurement Data** Omar Aboul-Enein, *National Institute of Standards and Technology*
#19	**Tracking and Control of Multiple Objects during Non-Prehensile Manipulation in Clutter** Zisong Xu, *University of Leeds*
#20	**Task and Joint Space Dual-Arm Compliant Control** Alexander Mitchell, *University of Oxford*
#21	**Bilateral Teleoperation through Haptic Exoskeletal Glove and Magnetic Tactile Sensors** Gabriele Giudici, *Queen Mary University of London*
#22	**Differentiable Physics-based System Identification for Robotic Manipulation of Elastoplastic Materials** Xintong Yang, *Cardiff University*
#23	**A Two-Fingered, Dexterous Robotic Hand for In-Hand Manipulation of Long, Thin Objects** Abdullah Nazir, *Hong Kong University of Science and Technology*
#24	**Polycube objects for robotic grasping research** Miles Hansard, *Queen Mary University of London*
#25	**Optimal Shared Autonomy for Contact-rich Robotic Manipulation** Joao Moura, *The University of Edinburgh*
#26	**Single-Layer Multimodal Skins using High-Density Electrical Impedance Tomography** David Hardman, *University of Cambridge*
#27	**3D Localization of Objects Buried within Granular Material Using a Distributed 3-Axis Tactile Sensor** Zhengqi Chen, *Queen Mary University of London*
#28	**Robot-assisted Dressing System based on Bimanual Arm and Machine Vision** Xu Ran, *University of Essex*
#29	**Haptic Localization with a Soft Whisker from Moment Readings at the Base** Mohammad Sheikh Sofla, *University of Lincoln*

Day 2

#30	**Risk-Aware Reinforcement Learning for Mobile Manipulation** Michael Groom, *University of Oxford*
#31	**Robotic Teleoperation Workload Assessment: Performance Metrics Outperform Physiological Indicators** Gift Odoh, *University of Nottingham*
#32	**EleTac: Pneumatic Elephant Trunk-Inspired Soft Gripper with Vision-Based Tactile Sensing** Tuan Nguyen, *Japan Advanced Institute of Science and Technology (JAIST)*
#33	**Using Machine Teaching to Boost Novices' Robot Teaching Skill** Yuqing Zhu, *King's College London*
#34	**Needle Tracking with Single Smartphone Magnetometer and Compliant Mechanism Needle Holder** Hongguang Li, *Queen Mary University of London*
#35	**Manipulability Transfer and Tracking Control: Bridging Domain Adaptation with Predictive Feasibility** Yuhe Gong, *University of Nottingham*
#36	**CoBT 2.0: Collaborative Programming of Spatially Conditioned Semantic Behavior Trees** Aayush Jain, *Technological University Dublin*
#37	**Head-worn Haptics and User Experience: Use on an Eye-Gaze Controlled Robotic Arm** Wyatt Howe, *University of Bristol*
#38	**Few-Shot Peduncle Detection Using Vision Transformers for Precision Manipulation in Grapes Harvesting** Shijia Liu, *Queen Mary University of London*
#39	**Design of FMRI-Compatible Wearable Haptic End-Effectors for Human Sensorimotor Research** Ildar Farkhatdinov, *King's College London*
#40	**TransForce: Transferable Force Prediction for Vision-based Tactile Sensors with Sequential Image Translation** Shan Luo, *King's College London*
#41	**The Teenager's Problem: Efficient Garment Decluttering as Probabilistic Set Cover** Yulei Qiu, *University of Leeds*
#42	**Learning 1000 Tasks in a Day** Pietro Vitiello, *Imperial College London*
#43	**InteLiPlan: Interactive Lightweight LLM-Based Planner for Domestic Robot Autonomy** Kim Tien Ly, *Imperial College London*
#44	**Screw Theory-Based Motion Analysis & Stable Jacobian-Switching Control for a Novel Reconfigurable Design Driven by Prismatic Joints** Lingxing Kong, *King's College London*
#45	**AI-Augmented Anomaly Detection in Robotic Manipulators with Blockchain-Verified Logs** Rasoul Sadeghian, *Royal College of Art*

#46	**Classifying Soil Types Through Robotic Interaction: A Preliminary Study** Sacha Morris, *King's College London*
#47	**Shear-based Grasp Control for Multi-fingered Underactuated Tactile Robotic Hands** Chris Ford, *University of Bristol*
#48	**From Impulse to Action: AI-Driven HD-sEMG Approach for Personalised & Intuitive Prosthetic Control** Balvinder Dhillon, *Queen Mary University of London*
#49	**Soft Acoustic Curvature Sensor: Design and Development** Mohammad Sheikh Sofla, *University of Lincoln*
#50	**Feeling the Pinch: Differentiating Thin Materials with a Biomimetic Soft Optical Tactile Sensor** Loong Yi Lee, *University of Bristol*
#51	**OmniDexter: A Modular Tendon-Driven Robotic Wrist with Enhanced Precision and Versatility** Mingxuan Song, *University College London*
#52	**TAG-CAPC: Tendon-driven Assistive Glove with Contextually-Aware Perception Control** Chen Hu, *King's College London*
#53	**Few-Shot Learning of Force-Based Motions From Demonstration Through Pre-training of Haptic Representation** Marina Aoyama, *The University of Edinburgh*
#54	**Learning Visuotactile Estimation and Control for Non-prehensile Manipulation under Occlusions** Joao Moura, *The University of Edinburgh*
#55	**Light Vector (LiVec) Non-camera-based Tactile Sensor Design** Stephen Redmond, *University College Dublin*
#56	**ViTacTip: Design and Verification of a Novel Biomimetic Physical Vision-Tactile Fusion Sensor** Qingzheng Cong, *Imperial College London*
#57	Linyan Han, *University of Leeds*
#58	**MultiGrainGripper: Enhancing Fin Ray Soft Grippers to Grasp Granular Material** Silvia Terrile, *University of Bristol*
#59	**Interaction & Motion Enhancement of Articulated-Soft Robots via an Integral-Action-Complemented Variable Impedance Control Approach** Emmanouil Spyrakos, *King's College London*

Invited Speakers

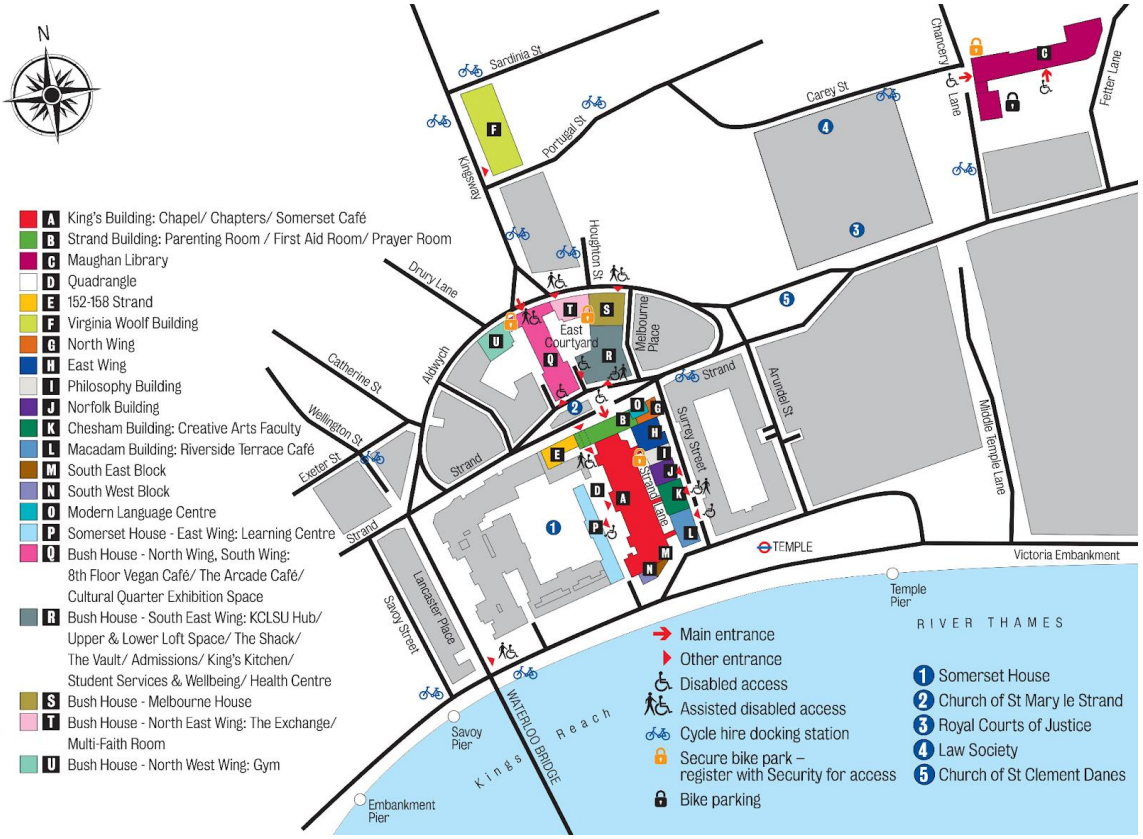
In order of appearance

Firstname Surname
(bio)
Affiliation

Talk: Title

Abstract

Getting to the Event Place



Main Entrance (Strand Entrance):
Located at the front of King's College London on the Strand, this is where you will enter the venue and find the registration desk.

Bush House Auditorium (Room –1.10):
Situated on the ground floor of Bush House, this auditorium will host all keynote sessions.

Poster Space:
Located on the 8th Floor South Terrace of Bush House, this area will house the exhibition booths and poster presentations.

Emergency Exits: All emergency exits are clearly marked in red on the map. Please take a moment to familiarize yourself with the nearest exit routes for your safety.

A detailed legend is included on the map to assist you in navigating the venue. If you need any help, the information desk near the main entrance is available to assist you.

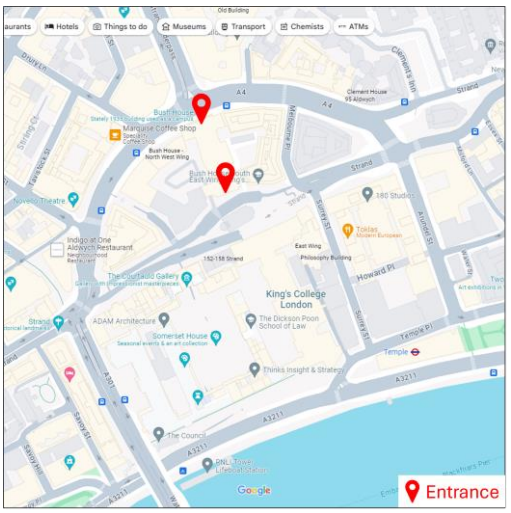
Directions to the Auditorium:

- Enter through either the Arcade or Aldwych entrance.
- Take the lift to Level -1.

Directions to the Poster Space:

- Enter through either the Arcade or Aldwych entrance.
- Take the lift to Level -1.

Entrance Information



Outside Access (from Aldwych)

- This entrance provides access to level 1 of Bush House Central.
- There is ramped/sloped access at this entrance.

Photos:



Outside Access (from Arcade)

- This entrance provides access to level 0.
- Step-free access is available.

Photos:




Lift Access

- The lift is located in the centre of the building, offering access to all levels, from Level 0 to Level 8.

Photos:



Floorplan

Getting to the Venue

Bush House Central Block,

King's College London,

Strand,

London

WC2R 2LS

Map Link

Directions

Please arrange access via the events team in advance where possible, or otherwise ask reception staff.

By Train

Nearest Station: Charing Cross (9-minute walk).

Other Nearby Stations: Waterloo: 12-minute walk. Waterloo East: 10-minute walk. Blackfriars: 12-minute walk.

For detailed train schedules and ticket purchases, visit Rail Timetable Information.

Coach

Bus

Bus Routes: The following buses stop directly outside the university: 1, 4, 26, 59, 68, 76, X68, 168, 171, 172, 176 (24 hour), 188, 243 (24 hour), 341 (24 hour), 521, RV1.

By Underground

Nearest Station: Temple (District and Circle lines) - 2-minute walk.

Other Nearby Stations: Charing Cross (Bakerloo and Northern lines) - 10-minute walk, Embankment (District, Circle and Bakerloo lines) - 10-minute walk, Waterloo (Jubilee, Northern, Bakerloo, Waterloo & City lines) - 12-minute walk, Holborn (Central and Picadilly lines) - 12-minute walk, Chancery Lane (Central line) - 15-minute walk.

By Boat

River Services: From the west, take the Putney – Blackfriars route and disembark at either Embankment Pier or Blackfriars Pier.

Driving & Parking

Parking: There is no public parking available at the university. However, a pay-and-display parking system operates in nearby streets, including Surrey Street. Motorcycle bays are available on the Strand, Arundel Street, Temple Place, and other nearby streets.

Taxi

Taxi Information: Taxis are readily available throughout London. The university can be reached by taxi from any major station or location in central London.

Accommodation

Below are a few suggestions:

Strand Palace Hotel
Location: 372 Strand, Westminster Borough, London, WC2R 0JJ
6-min walk to venue

Fitzrovia Hotel
Location: 20-28 Bolsover St, London W1W 5NB
20-min underground to venue

Langham Court Hotel
Location: 31-35 Langham St, London W1W 6BU
20-min underground to venue

Strathmore Hotel
Location: 41 Queen's Gate Gardens, South Kensington, London SW7 5NB
20-min underground to venue

Venue WiFi Access

Eduroam is accessible throughout the venue.

Alternatively, there is a 'The Cloud' network.

How to connect to the Cloud WiFi:

1. Switch on your smartphone, tablet or laptop and check that WiFi is enabled.
2. Select '_The Cloud' from the available network list.
3. Open your internet browser – the venue landing page will appear. If it does not, type in any web address to prompt the browser to load the landing page.
4. If it is your first time using The Cloud WiFi, you will need to create your own personal log-in. Follow the simple one-time registration process by sharing some details.
5. Once registered you can access the internet via The Cloud.

Refreshments & Water Access

Refreshments will be available during all breaks, including hot tea and coffee. Some water will be available but in order to reduce our environmental impact, we would like to encourage as many

attendees as possible to bring a reusable water bottle to refill.

Photos & Social Media

Find us on social media @KCL_CORE. Please tag us & share your content using #UKRobotManipWS!

Thank you for sharing your photo permission requests via your online registration.

Lab Tours

Information about joining these tours will be shared in the preceding speaker session. Registered tour attendees are asked to gather at their assigned meeting location at least 5 minutes before the end of the lunch break.

6th Manipulation Workshop

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