

Dr Angela Faragasso

Project Assistant Professor

Service Robotics Laboratory, Department of Precision Engineering, The University of Tokyo.

Co-chair of [IEEE Technical Committee on Performance Evaluation & Benchmarking of Robotic and Automation Systems \(TC Pebras\)](#)

My research interests include the design and creation of new bio-inspired visual-based sensing technologies for assistive-medical robotics, robotics for nuclear decommissioning and autonomous navigation.

Current Work:

Project Assistant Professor	Service Robotics Lab, Department of Precision Engineering, Graduate School of Engineering, The University of Tokyo, Tokyo, Japan. PI: Prof. Asama Hajime	4/2019 - Present
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Academic qualifications:

PhD in Robotics		14/11/2012
King's College London		-
Thesis title: <i>Vision-based Sensing Mechanism for Soft Tissue Stiffness Estimation</i>		28/06/2016

Master in Artificial Intelligence and Robotics		1/1/2010
La Sapienza, University of Rome (including eight months abroad periods at the Texas A&M)		-
Thesis title: <i>Vision Control For Humanoid Navigation in Office-Like Environments</i>		26/07/2012

Bachelor in Computer Science Engineering		22/09/2006
La Sapienza, University of Rome		-
Thesis title: <i>Online Applications to compile evaluations boards about Courses and the Teachers</i>		18/11/2009

Previous Work:

Post-doctoral research fellow	Service Robotics Lab, Department of Precision Engineering, Graduate School of Engineering, The University of Tokyo, Tokyo, Japan. Project Title: Vision-based sensing mechanism for assistive and rescue robots. PIs: Prof. Asama Hajime	11/2018 - 3/2019
JSPS post-doctoral research fellow	Service Robotics Lab, Department of Precision Engineering, Graduate School of Engineering, The University of Tokyo, Tokyo, Japan. Project Title: Vision-based sensing mechanism for assistive and rescue robots. PIs: Prof. Asama Hajime	11/2016 - 10/2018
Research Associate	Centre for Robotics Research, Dept. of Informatics, KCL, UK Project Title: Motion PIs: Prof. Thrishantha Nanayakkara	6/2016 - 10/2016
Research Associate	Centre for Robotics Research, Dept. of Informatics, KCL, UK Project Title: FourbyThree PIs: Prof. Kaspar Althoefer	01/2016 - 06/2016
Lead Robotics Advisor	Richer Education Exhibition Road, London, UK SW7 2AZ	09/2015 - 10/2016
Assistant Exam Support	Dept. of Informatics, KCL, UK Teaching support to a visually impaired undergraduate student in Computer Science with Robotics	04/2014 - 08/2016
Teaching Assistant	Dept. of Informatics, KCL, UK First Order Logic, Robotics System, Data Structures, Computer System, AI, Foundations of Computing, Elementary Logic with Applications, Sensor and Actuators, Real Time Systems and Control	01/2013 - 7/2016

Grants & awards:

JAEA-CLADS EPSRC Grant (60 million yen)	2021-2024
Grants-in-Aid for Early-Career Scientists (2.2 million yen)	2020-2022
Grants-in-Aid for Research Activity Start-up (2.2 million yen)	2019-2021
Grants-in-Aid for Scientific Research (2.3 million yen)	2016-2018

Fellowship:

Japan Society for the Promotion of Science (JSPS) Postdoctoral Fellowship for Overseas Researchers (Standard)	2016
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Award:

Satomi Scholarship Foundation Award	2021
IEEE Robotics and Automation Society "Outstanding Associate Editor Award" at the IEEE International Conference on Robotics and Automation (ICRA)	2020
CRAS best poster award "Clip-on stiffness sensor for endoscopic cameras retrieving sense of touch in minimally invasive intervention".	2016

Scholarships:

RosConf Diversity Scholarship	2016
PhD Scholarship EU FP7 project STIFF-FLOP: "STIFFness controllable Flexible and Learnable manipulator for surgical Operations"	2012
Engineering and Physical Sciences Research Council Award (EPSRC)	2012-2015
Scholarships for mobility to Texas A&M University	2010

Conferencing & research review roles:

Session Chair for:

- Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC – from 2018),
- IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS – from 2018),
- International Symposium on System Integration (SII – from 2017).

Organiser of the Workshops and Tutorials

- Robotics for nuclear environments exploration and decommissioning: challenges and emerging techniques (IROS 2022)
- Hybrid Tutorial on "How to write an r-article and benchmark your results" (ICRA 2022)
- IEEE RAS Seasonal School on "Reproducible research performance evaluation and benchmarking in robotics (January 2022)
- Joint virtual workshop on "Towards reproducibility and objective performance evaluation in robotic and AI" (ICRA 2021)
- Human-Aiding Robotics: open issues and future direction (IROS 2018).

Member of the Award Committee for:

- International Symposium on System Integration (SII 2017).

Reviewer for:

- IEEE Transactions on Robotics (TRO),
- IEEE Transactions on Instrumentation & Measurement,
- Robotics and Computer Integrated Manufacturing,
- Journal of Intelligent and Robotic Systems,
- IEEE Robotics and Automation Letters (RA-L),
- IEEE International Conference on Robotics and Automation (ICRA),
- IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS),

- Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC),
- Hamlyn Symposium on Medical Robotics,
- International Conference on Ubiquitous Robots and Ambient Intelligence (URAI),
- International Journal of Biosensors & Bioelectronics,
- Workshop on New Technologies for Computer/Robot Assisted Surgery (CRAS),
- Robotics Science and System (RSS),
- International Symposium on System Integration (SII),
- IEEE Sensors,
- Robotics and Autonomous Systems (ELSEVIER),
- Soft Robotics (SoRo),
- Sensors MDPI.

Invited contributions:

Lectures:

Course: Fundamentals of Robotics A	Wheeled Mobile Robots: Kinematics	Waseda University, Tokyo	22/1/19
Course: Fundamentals of Robotics B	Visual Servoing	Waseda University, Tokyo	1/7/19
Course: Cooperative Systems	Vision-based Sensing	The University of Tokyo	31/8/18

Invited talks:

Talk @ the Technical University of Munich & University of Tokyo TUM-UTokyo Excellence, Diversity, and Mobility Workshop	Novel Mechanical Manipulator for Efficient Fuel Debris Retrieval	Virtual seminar	30/3/2021
Seminar @ the University of New South Wales (UNSW)	Robotics Research and Education: Present and Future	Virtual seminar	21/4/2021
Talk @ the International Workshop on Embodied Intelligence	Smart design of effective robot mechanisms and devices	Virtual talk	25/5/2021
Talk @the Joint Workshop on AI Driving Olympics and Steps Towards Widespread Reproducibility of Research and Objective Performance Evaluation of Intelligent Robotic Systems at ICRA 2021	Reproducibility and Benchmarking in Robotics for Healthcare and Nuclear Decommissioning	Virtual talk	4/6/2021
Talk @ the Workshop on “Robot-assisted Medical Examination Training”, IROS 2020	Replicability and Reproducibility in Medical Robotics: How accurately can we train our doctors?	Virtual talk	23/10/2020
Seminar @ Worcester Polytechnic Institute (WPI)	Reproducibility and benchmarking in Robotics and Healthcare	Virtual talk	17/10/2020
Seminar @ La Sapienza, University of Rome	Toward Reproducible Research: Benchmarking and Verification in Medical and Remote-Controlled Rescue Robotics	Rome, Italy	16/12/19
Seminar @Nankai University	Remote Technology for Decommissioning and Its Expansion to Other Application	Tianjin, China	5/12/19

IROS Workshop on Reproducibility of Research, Benchmarking and Verification of Autonomous Robotic Systems

Reproducibility of Research, Benchmarking and Verification in Medical Robotic

Macau, China

4/11/19

Competences, training & skills:

- **Continuous participation** in training courses to enhance my **intellectual abilities** and **techniques** to do research and teaching, personal effectiveness, research governance/organisation, and my engagement skills to work with others. Moreover, I have been involved in the organisation of different open days to enhance the interest of young generation in Robotics.
- Attendance of **training course**: “Matlab Robotics Toolbox”, “ROSCONF2016”, “LabVIEW”.
- IT Skills:
 - Programming Language: Robot Operating System (ROS), C/C++, Python, Java, SQL, Assembly, Lisp, Cobol, Android, Prolog.
 - CAD Software: SolidWorks, Abaqus FEA, Illustrator.
 - Operating System: Windows, Linux, MacOS.
 - IDE: OpenCV, OpenGL, LabView, RoboRealm.
 - Robot simulation environments: Rviz, Simulink, SOFA framework (Simulation Open Framework Architecture), Webots, Simulink.
 - Microsoft Office, LaTeX, Adobe Products, Beamer.
- Language Skills: Italian, English, basic Japanese.
- Artistic and other competences and interests: music, travelling, fitness, politics/news.

Brief description of my roles at the University of Tokyo:

- Staff member of the intelligent construction and Moonshot projects.
- Post-doctoral research fellow in the Service Robotics Lab, Department of Precision Engineering, Graduate School of Engineering, The University of Tokyo.
- Exploration of novel visual-based technologies for search and rescue robots.
- Staff member of the **IMPACT**: Impulsing Paradigm Change through Disruptive Technologies Program.
- Supervision of international student for the **RoboCup@Home**.
- Supervision of PhD student in “**Mobile Robot Fault Detection combining different localization method**”.
- Supervision of a Master student in “**Iterative Energy Shaping of Port-Hamiltonian Systems**”.
- Supervision of international student in “**Visual-based navigation for small sized humanoid robot**”.

Brief description of my roles at King’s College London:

- Research Associate within the **EU FP7 project**.
- PhD scholarship students within the **EU FP7 project** STIFF-FLOP responsible for hard- and software integration of **embedded sensors** into a **medical soft manipulator** in ROS (Robot Operating System).
- **Advisor/mentor** of **BSc and MSc and PhD** at King’s CoRe.
- **Teaching Assistant** for undergraduate/postgraduate courses giving lectures/tutorials/lab demonstrations: **Robotic Systems, Distributed Systems, Real Time System, Foundations of Computing, Elementary Logic with Applications, Adaptive and Robotics Systems, Programming Practice, Computer Systems, Artificial Intelligence**.
- Lecturer/mentor for post-16 students from **under-represented groups** teaching “Mobile robots” (Hands-on lectures using the Khepera mobile robot), K+ **widening participation**.
- Lecturer/mentor in Robotics Open Day, Robotics Competition and Maths School Club teaching “Mobile robots” (Hands-on lectures using the Lego Mindstorm/ev3 mobile robot).
- Co-organiser of **invited STIFF-FLOP demonstrations** at the **Science Museum**, the **SCHUNK Expert Days** & the **British Science Festival**.