

# Christina Kassab

I'm passionate about developing semantic representations to drive innovation in autonomous systems  
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## Education

### University of Oxford

Current

DPhil in Engineering Science

- Thesis: Language-Extended Visual SLAM for Real-time Scene Understanding
- Supervisor: Prof. Maurice Fallon

### Imperial College London

July 2022

MEng in Bioengineering

- Thesis: Terrain prediction based on high density sEMG and IMU data
- Supervisor: Prof. Anthony Bull
- Dean's List (Top 10%)

## Research Experience

### Imperial College London

June 2022 - July 2022

Undergraduate Research Assistant

- Real-time object recognition and camera control under varying lighting conditions for a wheeled robot

### Össur

Sept 2020 - Sept 2021

Research and Innovation Intern

- Designing a control system for lower limb prosthetics using IMU and surface EMG

### Queen Mary's Hospital

July 2019 - Aug 2019

Gait Lab Assistant

- Use of Visual3D and Qualisys to analyse stroke patient's gait and concluding with recommendations on appropriate rehabilitation strategies

## Teaching Experience

### University of Oxford

Feb 2024

Teaching Assistant

- TA for a course aimed at introducing students to robotics, including a hands-on search and rescue task

### Imperial College London

Sept 2021 - Dec 2021

Teaching Assistant

- Lead TA of the C++ course explaining fundamental concepts of good programming practices

### Imperial College London

June 2018 - Sept 2018

Undergraduate Research Assistant

- Creating JavaScript simulations to assist undergraduates in understanding concepts discussed in Maths and Mechanics courses

## Publications

**Christina Kassab**, Matias Mattamala, Lintong Zhang, Maurice Fallon, "Language-EXTended Indoor SLAM (LEXIS): A Versatile System for Real-time Visual Scene Understanding", Int. Conf. Robot. Autom. (ICRA), 2024

Jianeng Wang, Matias Mattamala, **Christina Kassab**, Lintong Zhang, Maurice Fallon, "Exosense: A Vision-Centric Scene Understanding System for Safe Exoskeleton Navigation," Int. Conf. on Intelligent Robots and Systems (IROS), 2024 (Submitted)

## Awards

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### **Best MEng Project Presentation (2022)**

- Recognises the highest scoring MEng project presentation

### **Device Access Prize for Best Bioengineering Undergraduate Poster Finalist (2022)**

- Awarded by the Biomedical Engineering Division of the Institution of Mechanical Engineers

### **Jack Petchey Award (2017)**

- Recognises outstanding young people aged 11-25 across London and Essex

## Workshop Presentations

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*Visual-Language Models for Scene Understanding and Localisation* (2024), British Machine Vision Association Symposium on Vision and Language

*Visual SLAM for Exoskeletons: Enabling Accurate Navigation in Complex Environments* (2023), Computer Vision for Wearable Robotics, ICRA 2023

## Other Activities

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### **Leadership**

- Founder of Oxford Robotics Institute student committee

### **Summer Schools**

- ETH Robotics Summer School 2023

## Skills

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### **Languages**

- English (Native), Arabic (Intermediate), Japanese (Beginner)

### **Programming**

- C++, Python, ROS, Arduino, MATLAB

### **Other Technical Skills**

- SolidWorks, Fusion360, 3D Printing