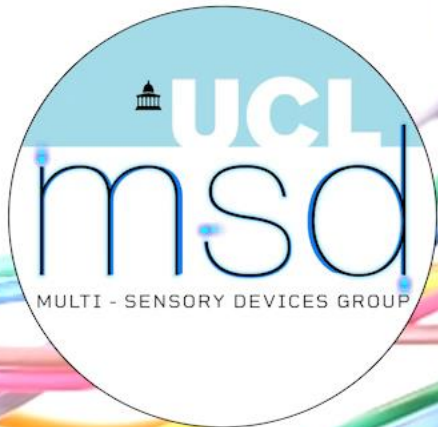


Systems Engineering for the IoT- MSc



UCL

Multi-Sensory Devices (MSD) group




Our Ethos: "Full-stack development of interactive multisensory interfaces, from fundamental physics to end user perception and experiences"

Human factors User Experience




Multisensory experiences
Human perceptual studies, designing with all senses



Robotics & AI
Intelligent machines, multi-agent learning, physical interactions




Display & Fabrication
Acoustic manipulation, Digital fabrication, Multi-modal display




RAEng Chair
Sound modulators, Physical models, Emerging Tech.



Perception and Cognition,
VR interaction, Text-To-Speech technology



Multi-Robot Systems
Cooperative control, swarm intelligence, distributed learning



Multimodal interfaces
3D displays, high performance computation, novel interaction

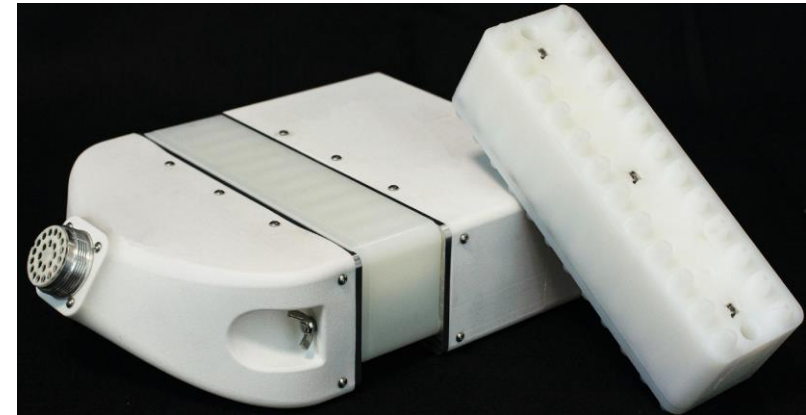
Engineering Physical Sciences



Systems Engineering for IoT

ultraleap 

 Smell Made
Digital





- The path **from an idea to a commercially viable product** is shorter than ever

Infrastructure

Networks, IoT
services

Electronics

microcontrollers,
sensors,
actuators.

Manufacturing

Technical

Quick

feasibility

material science



- The path **from an idea to a commercially viable product** is shorter than ever
 - Technical feasibility is **not enough**.
 - Understanding **user needs** (opportunity)
 - Awareness of **innovation landscape** (constraints)
 - Real world **deployment pitfalls** (laws, robustness)
- Our MSc - Navigate the line between what is **feasible, desirable and possible**

A yellow circle with a thin black border, containing the text "Technical feasibility" in white.

Technical
feasibility

Systems Engineering for IoT



MSD Group

UCL

	T1	T3	Summer
15			
15			
15			
15			

Systems Engineering for IoT

	T1	T3	Summer
15	Real-world Multi-agent Systems <ul style="list-style-type: none">• Introduction to multi-agent systems• Challenges with heterogeneous architectures and power• Deployments in real-world		
15	Modelling and Designing Embedded Systems <ul style="list-style-type: none">• Edge nodes in sensor-actuator embedded systems• Theoretical background• Practical implementation		
15			
15			

Systems Engineering for IoT

	T1	T3	Summer
15	Real-world Multi-agent Systems <ul style="list-style-type: none">• Introduction to multi-agent systems• Challenges with heterogeneous architectures and power• Deployments in real-world	System Thinking through Speculative Design <ul style="list-style-type: none">• Manage complex situations• Handle incompatible perspectives• Engaging with multiple stakeholders	
15	Modelling and Designing Embedded Systems <ul style="list-style-type: none">• Edge nodes in sensor-actuator embedded systems• Theoretical background• Practical implementation	Entrepreneurship: Theory and Practice (COMP0039) <ul style="list-style-type: none">• Business lifecycle (e.g., business plan)• New business operation• Exploiting new e-commerce tools and techniques	
15			
15			

Systems Engineering for IoT

	T1	T3	Summer
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15			
15	Optional Module-1 <ul style="list-style-type: none"> • Robotic Control Theory & Systems • Introd. to Deep Learning 	Optional Modules-2 <ul style="list-style-type: none"> • Mobile Systems & Interactions • Thinking Disruption 	

Systems Engineering for IoT

	T1	T3	Summer
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15	Designing Sensor Systems (group project) <ul style="list-style-type: none"> • Create useful sensor system solutions as part of an group • Hands-on experience with creating/deploying complex sensor systems • Annual Showcase event 		
15	Optional Module-1 <ul style="list-style-type: none"> • Robotic Control Theory & Systems • Introd. to Deep Learning 	Optional Modules-2 <ul style="list-style-type: none"> • Mobile Systems & Interactions • Thinking Disruption 	

Systems Engineering for IoT

	T1	T3	Summer
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15	Modelling and Designing Embedded Systems <ul style="list-style-type: none"> • Edge nodes in sensor-actuator embedded systems • Theoretical background • Practical implementation 	Entrepreneurship: Theory and Practice (COMP0039) <ul style="list-style-type: none"> • Business lifecycle (e.g., business plan) • New business operation • Exploiting new e-commerce tools and techniques 	
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Systems Engineering for IoT

- Introduces **hardware** and **algorithms** of engineering IoT systems in real-world settings.
- Provides the **and socio-technical aspects** related to designing and deploying IoT systems in the real-world.



Systems Engineering for IoT

- Introduces **hardware** and **algorithms** of engineering IoT systems in real-world settings.
- Provides the **and socio-technical aspects** related to designing and deploying IoT systems in the real-world.
- We start in September 2023... **join us!**



Systems Engineering for IoT

Questions?



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