

Korea-EU Horizon Europe Researchers Networking Forum on Energy & Advanced Mobility

Mark Colley



Assistant Professor

**University College
London Interaction
Centre**

**Human-Computer
Interaction**



1. Short Introduction of your Organization

UCL

- public research university founded in 1826
- 50.000 students
- Approx. 10.000 academic staff
- Yearly budget: 2 billion



9th
in the world
QS World University Rankings 2025





1. Short Introduction of your Organization

UCL Interaction Centre

- Blend of Computer Science and Psychology
- >25 Professors
- World leading in Human Computer Interaction
- Outstanding facilities for Mobility research
- Hosts: WHO Collaborating Centre for Research on Assistive Technology



70° DEGREES
PITCH MOTION
RANGE



40° DEGREES
ROLL MOTION
RANGE



360° DEGREES
YAW MOTION
RANGE WITH
OPTIONAL YAW
PLATFORM



UCLiC

UCL

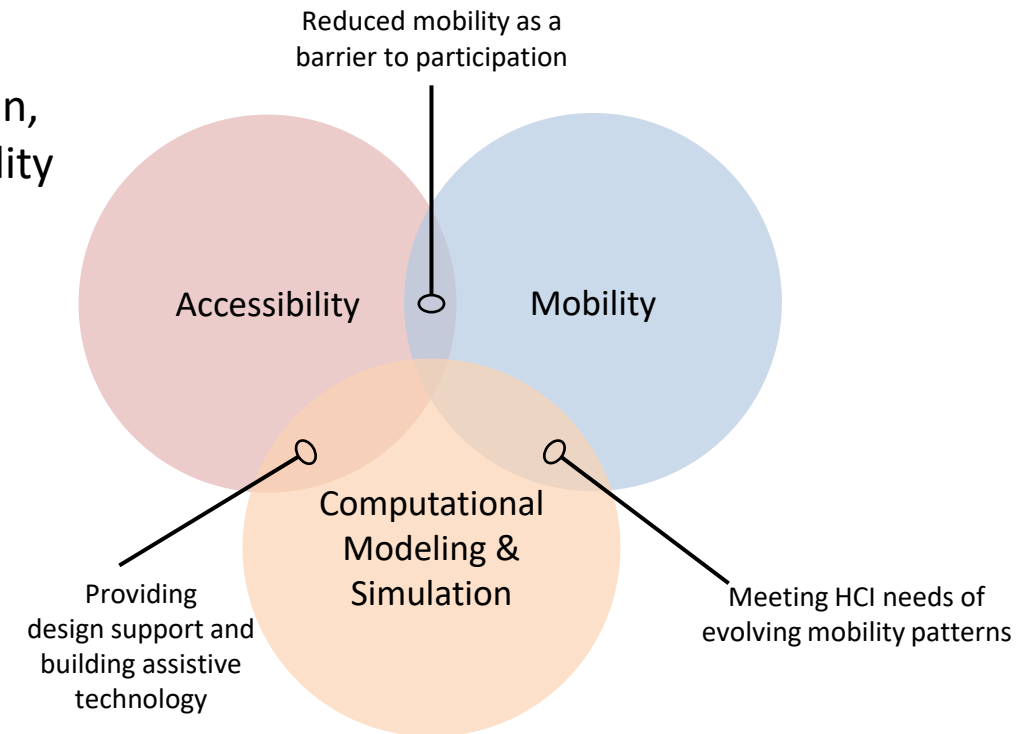


2. Expertise

- Human computer interaction at scale
- Methods for studying people and technology across lab, street, and simulator contexts
- Multimodal Interaction
- Methods to Studying and Designing Interaction
- Expertise in Working with People with Impairments
- Computational Interaction (Datasets, Optimization)

2. Expertise – Mark Colley

- Develop and provide simulators and datasets: scenarios, XR walkthroughs, city scale traffic models, annotated logs for benchmarking
- Design interaction concepts for automated systems, external communication, takeover and teleoperation support, attention management and explainability
- Build optimisation loops: human in the loop and simulation in the loop, sample efficient search for interface and policy parameters
- Set standards for accessibility, inclusive recruitment, assisted navigation, wayfinding cues, low vision and mobility support
- Drive open science work package, community workshops, student engagement and training
- Lead user research and evaluation





2. Expertise - Keywords

Human computer interaction

Computation Interaction

User testing

Simulation

Human-Machine interface

human-centered datasets



3. Your Project Idea

Targeted calls

HORIZON-CL5-2026-01-D6-04: Integration of **human driving behavior** in the validation of CCAM systems

HORIZON-CL5-2026-01-D6-13: Safety of **Cyclists, Pedestrians** and Users of **Micromobility** Devices

HORIZON-CL5-2026-01-D6-14: **Predicting** and avoiding road crashes based on Artificial Intelligence (AI) and big data

HORIZON-CL5-2027-06-D6-08: Enhancing Mobility for **All**: affordable, reliable and accessible multimodal transport for inclusive rural and urban connectivity –Societal Readiness pilot

HORIZON-CL5-2026-10-D6-03: Generative AI for smarter CCAM: enhancing perception, decision-making, and validation

HORIZON-CL5-2026-10-D6-07: Supporting sustainable and smart urban mobility in Europe (CIVITAS)

HORIZON-CL5-2027-10-D6-10: Enhanced resilience in **multimodal passenger transport** through digital technologies and generative and discriminative AI



3. Your Project Idea

Main objectives

Understand human behavior (as drivers, cyclists, pedestrians)

To **model** human behavior leveraging state-of-the-art ML approaches and **unique data**

Using models to **predict** behavior and necessary **HMI** adaptations

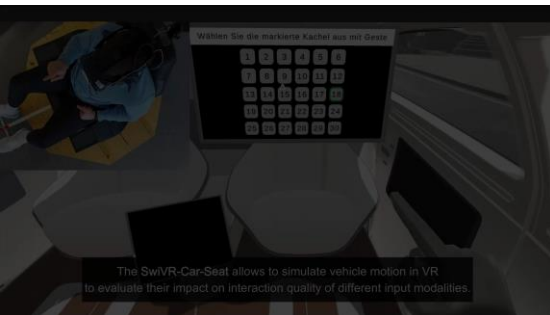
Integrate the perspectives of **people with impairments** (calls are targeted “for All”)

Create **simulations and simulators** that enable studying human behavior and novel approaches (e.g., service design, HMI)

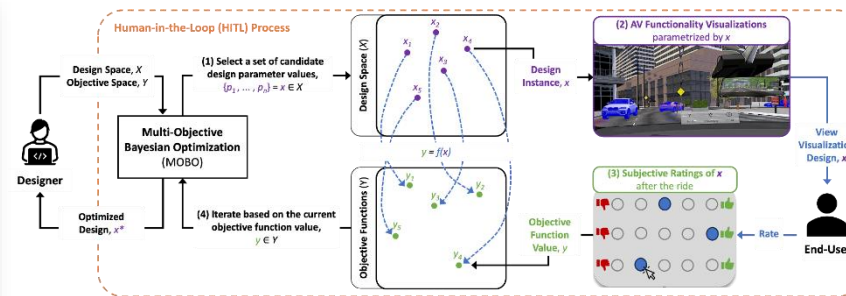
3. Your Project Idea

Idea briefly explained

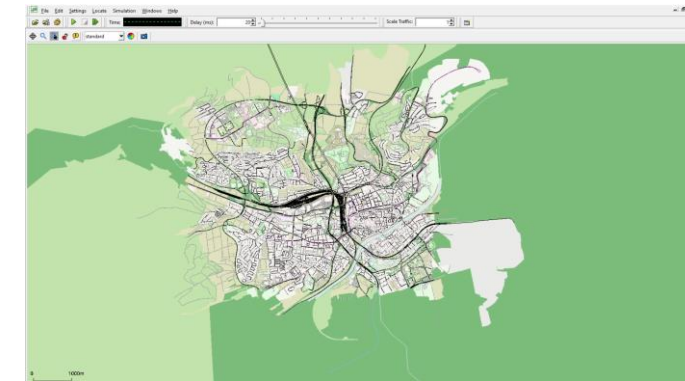
Simulators



Human Behavior Prediction & Modeling



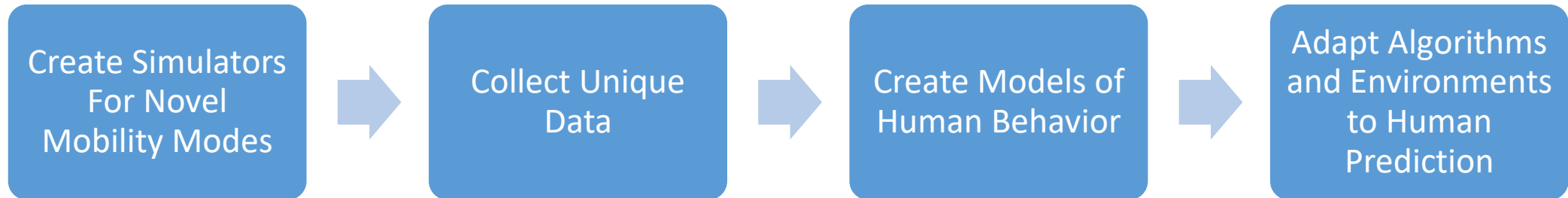
Simulation





3. Your Project Idea

Idea briefly explained





4. Profile You are Seeking and Why

What partners with what profiles am I looking for?

Partners with:

Advanced **Infrastructure** complementing UCL

Advanced Machine Learning **Modeling** Expertise

Urban Planning Expertise

Policy, standardization, and CCAM deployment

Industry Contacts (beyond mine at Mercedes Benz UX research)



5. Contact Details

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