# Title: Urban Visual Intelligence

Monday 23.06.25, 14:00-17:00

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# Overview

The visual aspect of cities has been an important topic in urban studies since the late 19th century. In recent decades, hybrid sensing techniques and ad hoc sensor deployments have enabled cities to generate vast amounts of visual data. With advances in geo-spatial analysis, researchers can now analyse visibility of physical environment and quantify human spatial cognition, perception, socioeconomic conditions, and movement dynamics in unprecedented ways. Although numerous studies have utilised visual data, the methodologies for conceptually quantifying the physical and perceptual factors of urban spaces are not yet fully established. This workshop will explore how the quantification of visual information can be systematically applied to deepen our understanding of the relationship between humans and place. It will introduce participants to powerful analytical tools based on urban imagery, network analysis, and spatial openness measurement, and explain how these tools have been assessed by behavioural experiments essential for understanding visual perception, visibility, visual information and additional wellbeing parameters. Participants will engage in hands-on activities including the analysis of sample urban environments using specialised software. They will also have the opportunity to discuss how visual intelligence can inform the design of inclusive, efficient, and aesthetically pleasing urban spaces.

# Agenda

14:00 – 14:50 | Theoretical foundations - Evolution of visual studies in urban research

14:50 –15:00 |Break

15:00 – 16:20 | Hands-on session on analytical tools for urban visual intelligence

* 15:00 – 15:35 |[POI VizNet](https://plugins.qgis.org/plugins/poi_visibility_network/#plugin-about)
* 15:40 – 16:15|SOI, U-SOI

16:20 – 16:50 | Open discussion - Quantifying visual aspects and applying visual intelligence to real-world challenges

**Technical Requirements:**

**POI VizNet** tutorial will require QGIS, which could be found here: <https://qgis.org/download/> and the plug-in installation: <https://plugins.qgis.org/plugins/poi_visibility_network/>

**SOI/USOI** demonstrations will use Rhino and Grasshopper. You can download an evaluation version of the Rhino, valid for 90 days from the Rhino official website:

(<https://www.rhino3d.com/download/rhino/evaluation/>).

Grasshopper is built-in into Rhino.

Please download and install all the software tools before the workshop. All relevant materials for the workshop including 3D models, GIS input files and codes are found here: <https://github.com/MoForghani/cupum2025-Visual-Intelligence-workshop>

