

Human-Space Interaction Modelling

Spatial Cognition and Space Navigation

Background and aim:

Humans and their environment have a reciprocal relation: we constantly build and change our environment and our environment shapes the way we use the space and navigate through it. However, we still lack a comprehensive understanding of how different spatial qualities affect legibility of space and its ergonomy.

Research question:

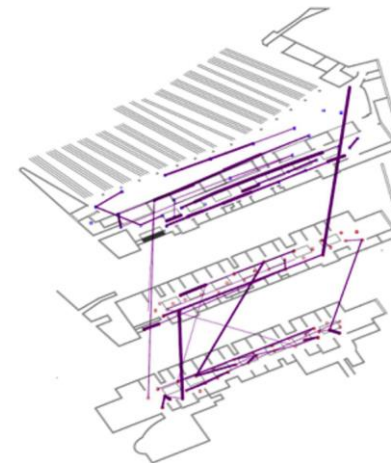
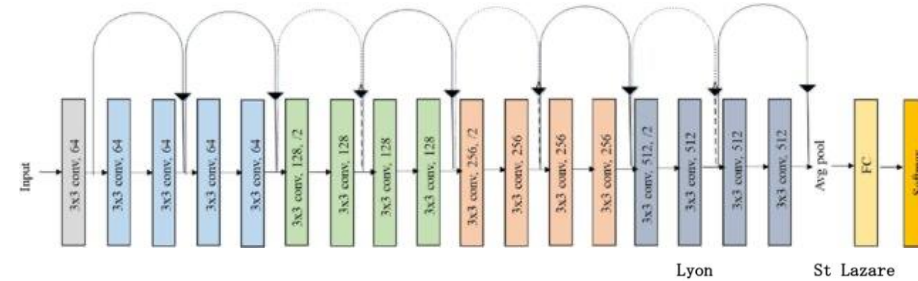
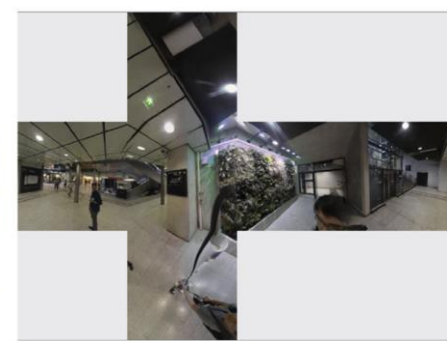
How can we objectively assess the cognitive and ergonomic comfort of a spatial configuration?

Design objective:

To design and develop a computational framework for assessing the cognitive/ergonomic spatial qualities.

Methods:

- Spatial Computing (Computational Geometry & Linear Algebra)
- Mathematical Analysis of Visibility
- Deep Neural Networks (DNN, Artificial Intelligence)
- Computer Programming (Python or C#)



	Hall	Commercial	Corridor
1.	Vanishing Point	Billboards	Wall
2.	Geometry	Store front	Store front
3.	Wall Content	Interesting items	Edges and lines
4.	Columns	Lights	Lights
5.	Ceiling		

Image Credits: Z. Wang et al., 2019, doi: [10.1016/j.buildenv.2019.04.035](https://doi.org/10.1016/j.buildenv.2019.04.035).