



Human-centered design
and inclusive technologies



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Navigating Heat: Sensor-Based Wayfinding Strategies in Public Spaces Under Variable Thermal and Weather Conditions

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The Project

This PhD project explores how climate change affects wayfinding in public spaces. Using sensor data on both human responses and environmental conditions, the project examines how thermal stress like heat and humidity shapes our comfort and navigation decisions. It aims to design adaptive, data-driven wayfinding systems that guide users along more comfortable and safer routes during extreme weather.



Interdisciplinary Approach

Bridging architecture, psychology, and data science, this research integrates environmental and physiological sensing, behavioural analysis, and human-centered design.

Research Methods

This project combines **wearable physiological sensing** (skin temperature, heart rate) with **environmental monitoring** (temperature, humidity, CO₂, PM2.5) and **spatial tracking** (via sensors or observation).

Field studies will identify behavioural patterns and evaluate **prototype navigation tools**.



Project Contribution

Science / Technology / Society

The project advances understanding of how thermal stress influence human behaviour and spatial decision-making. It

- develops **adaptive, sensor-based navigation tools** that
- integrate environmental data and
- supports **inclusive, climate-resilient design strategies** that

enhance comfort, safety, and accessibility in public spaces.

