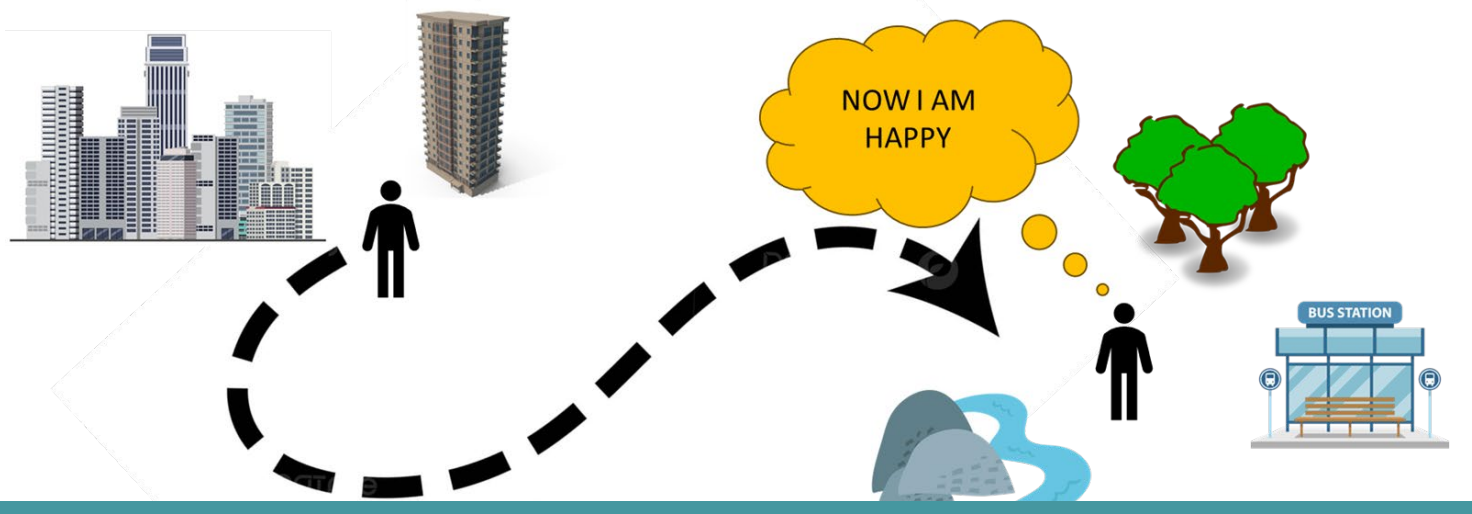
The Department of Geography and Environment presents:

Integrating Context into Human Mobility Analysis: Environmental, Geographical, and Network Dynamics



PhD Public Lecture
All are welcome!

Human mobility provides a clear view for examining and predicting a wide range of human activities. Irrespective of the approach, understanding mobility is not just about tracking movement but also about comprehending the context in which it occurs. This can be achieved by incorporating and integrating a variety of data sources into our mobility data analysis. This thesis conducts a thorough investigation into how human mobility is related to environmental factors, geographical contexts, and community structures.

The research begins with an evaluation of the effects of environmental factors on stress and happiness levels during travel. By applying geographic ecological momentary assessment, it documents instantaneous emotional reactions to surroundings, underscoring the importance of green and blue spaces in boosting happiness and lowering stress. This study highlights the critical influence of the environment on the feelings individuals experience during daily travels, advocating for sensible urban planning and policies to improve emotional well-being. The thesis then introduces the Mobility Deviation Index, a new concept incorporating geographical context into the analysis of human mobility patterns. This approach contrasts observed mobility with expected levels based on amenity availability. The results advocate for including geographical context in mobility research directly when calculating indices of mobility, showing that patterns are significantly influenced by local characteristics. Next, it presents the Local Mobility Index (LMI), a novel metric for measuring local mobility behaviors. The LMI examines individual destination choices relative to amenity distribution. Finally, the thesis proposes the Network Community Structure Similarity Index, a new method for evaluating changes in community structures over time in mobility networks. This approach overcomes the limitations of previous methodologies, offering a clearer view of community dynamics.

This thesis advances human mobility research, offering a better view that underscores the critical role of context in determining mobility patterns. It not only deepens our understanding of human movement but also lays the groundwork for future research and policymaking aimed at fostering more liveable, sustainable, and equitable urban environments.

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Via Zoom

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