

# 1st ACM SIGSPATIAL 2021 Workshop on Animal Movement Ecology and Human Mobility (HANIMOB 2021)

## CALL FOR PAPERS

Date: 2 November 2021, Webpage: <https://hanimob.github.io/2021/index.html>

**Scope.** In recent years, collection of tracking data has become ubiquitous in many scientific disciplines. One of these is movement ecology, which studies the spatio-temporal patterns and processes that regulate animal movement. Ecologists collect data on animal movement using telemetry tools (such as for example bio-logging tags) and combine resulting trajectories with contextual data on environment, such as remote sensing products or other empirically collected data. Combined data are used to build models that describe the determinants of animal movement, such as environmental constraints (e.g. snow layer or habitat fragmentation) or the inner status of individuals (e.g. memory, orientation capacity).

Movement is also studied and tracking data collected in human mobility research, which spans a set of disciplines, from GIScience, to computer science, physics, geography and transportation science. While data and analytical methods are similar between the animal and human disciplines, there is little interdisciplinary awareness of these similarities. Recently, GIScientists have called for the establishment of the Integrated Science of Movement, with the specific aim to bridge the gap between movement ecology and human mobility and raise awareness of respective problems, data and methods. This workshop aims to cross this gap in the direction from ecology to GIScience by introducing a specific ecology problem to the GIScience community and searching for interdisciplinary solutions.

Animal movement and behavior are altered by human activity and presence. Ecologists are trying to understand the impact of anthropogenic environmental change on animal movement (e.g. habitat loss and fragmentation), which is typically done using static data from remote sensing and similar sources (e.g. road maps, high resolution forest cover, etc.). An open challenge however is how dynamic human presence and activity (e.g. road traffic or human recreational activities) impacts animals, a topic that needs to be studied with dynamic human data that have so far been difficult to obtain. Recently however, in the wake of the COVID-19 pandemic, human mobility data have become open and available and there is an opportunity to use these in conjunction with animal data to study wildlife-human interaction. This however requires bespoke complex spatio-temporal methods for both data fusion and analysis that currently do not exist. The HANIMOB workshop's main focus is therefore an interdisciplinary effort to develop methods, metrics and other solutions that will integrate analysis of dynamic anthropogenic activity, such as human mobility, into the study of animal movement.

While we focus on a specific topic, wildlife-human interaction, we are also interested in contributions on a broader scale, that is, on any topics that bridges the interdisciplinary gap between animal movement and human mobility.

**Themes.** We invite submissions which describe new research ideas that focus on converging movement ecology and human mobility research, as well as those that cover broader themes on either animal movement or human mobility. Potential topics include, but are not limited to:

- Availability and downscaling of human mobility data for analysis of wildlife-human interaction
- Integration of human mobility concepts in movement ecology
- Integration of ecological concepts in human mobility analysis
- Methods for data fusion of movement data and contextual data (environmental, spatial, remote sensing, etc.)
- Context-aware movement analysis (analyzing integrated movement and contextual data)
- Use cases in human mobility and/or animal movement analysis
- Software platforms for animal and/or human movement
- Data science and movement analytics approaches to movement ecology or human mobility
- Visualisation and visual analytics for animal and/or human movement
- Geoprivacy issues in both human mobility and animal ecology (for example, approaches for movement data anonymisation to prevent identification of individual humans or prevent poachers have access to locations of protected species)
- Ethics of movement data analysis, open data and open methods

### **Submission guidelines.**

Papers can:

- present research projects at different stage of development
- present case studies/demos of new systems (even works in progress)
- discuss the needs and problems associated with the use of human mobility data for ecological investigation (position papers)
- discuss case studies published elsewhere, but in the optic of the theme of the workshop (e.g. potential further applications of applied methodologies)

In any case, submitted papers must be neither previously published nor under review by another workshop, conference or journal. Only electronic submissions in PDF will be accepted.

We accept two types of submissions:

- Long papers (max 8-10 pages)
- Short papers (max 4 pages)

Papers should conform to the standard ACM Template.

All submitted papers will be peer reviewed. At least one of the authors of each paper accepted for presentation in HANIMOB 2021 must register for both the main SIGSPATIAL conference and the workshop, to attend the workshop, and to present the accepted paper in the workshop. All papers presented at the workshop will be included in the ACM Digital Library. Following the ACM SIGSPATIAL tradition, our workshop will award the Best Paper with an ad-hoc certificate.

Submissions should be uploaded to the HANIMOB webpage on EasyChair:  
<https://easychair.org/my/conference?conf=hanimob21>

### **Important dates.**

- Deadline for workshop submissions: 31 Aug 2021
- Decisions to authors: 30 Sept 2021
- Submission of revised papers: 15 Oct 2021
- Workshop: 2 Nov 2021

**Note on workshop mode.** We are currently not able to confirm the workshop mode (online/hybrid/in person), as this depends on the mode of the ACM SIGSPATIAL 2021 conference. The SIGSPATIAL 2021 organisers have however confirmed that it will be possible to participate virtually, even if the conference is held in person. We will provide more information as soon as we find out more.

Please follow updates on the conference website: <https://sigspatial2021.sigspatial.org/>

**Organising committee:**

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