

PhD Position: Spatio-temporal causal modeling of shared EV demand

100%, Zurich, fixed-term

ETH Zurich is one of the world's leading universities specialising in science and technology. It is renowned for its excellent education, its cutting-edge fundamental research and its efforts to put new knowledge and innovations directly into practice. The Institute of Cartography and Geoinformation is looking for a highly motivated doctoral candidate at the [Chair of Geoinformation Engineering](#), starting in January/February 2026.

Project background

The research project “Estimating impacts of car-sharing vehicle and station alteration on induced demand across spatio-temporal contexts”, funded by the Swiss Federal Office of Energy, investigates how modifications in vehicle and station configurations for shared electric vehicles (EVs) influence demand across different spatio-temporal contexts. Shared EVs offer significant benefits for sustainable mobility and the strategic placement of car sharing stations is crucial to maximize user adoption. Using causal effect estimation and spatially aware predictive methods, tools will be developed to simulate the impact of system changes in selected scenarios, supporting the transition to a fully electric car-sharing service. These methods are adaptable to a wide range of spatial decision-making problems by offering a framework to explore “what-if” interventions across space and time.

The 3-year project will be carried out jointly by the Chair of Geoinformation Engineering (Prof. Dr. Martin Raubal), the Department of Transport and Planning at TU Delft, and Mobility Car Sharing.

Job description

The main objective of this PhD position is the investigation and application of methods for evaluating the impact of changes in station or vehicle configurations on travel behavior. The doctoral student will further estimate causal effects through predictive

machine learning models, and develop a generalizable decision-support system for vehicle and station allocations. This research will be conducted together with domain experts and collaborators.

The research will be linked to current topics and projects within the Mobility Information Engineering lab and supervised by Prof. Dr. Martin Raubal (Chair of Geoinformation Engineering). The position also includes teaching responsibilities (20%) in courses offered by the Chair of Geoinformation Engineering.

Profile

- The ideal candidate must have an academic degree in Geoinformatics, Transportation, Computer Science, or related fields, as well as a strong research interest in (Spatial) Machine Learning
- Strong programming skills are required.
- The candidate must have excellent communication skills in English (oral and writing)
- be team-oriented and willing to work in an interdisciplinary and international environment.
- Knowledge of GIS
- German language skills (for teaching) are a significant plus.

Workplace



We offer

ETH Zurich is one of the world's leading universities specialising in science and technology. We are renowned for our excellent education, cutting-edge fundamental research and direct transfer of new knowledge into society. Over 30,000 people from more than 120 countries find our university to be a place that promotes independent thinking and an environment that inspires excellence. Located in the heart of Europe, yet forging connections all over the world, we work together to develop solutions for the global challenges of today and tomorrow.

> [Working, teaching and research at ETH Zurich](#)

We value diversity and sustainability

In line with [our values](#), ETH Zurich encourages an inclusive culture. We promote equality of opportunity, value diversity and nurture a working and learning environment in which the rights and dignity of all our staff and students are respected. Visit our [Equal Opportunities and Diversity website](#) to find out how we ensure a fair and open environment that allows everyone to grow and flourish. Sustainability is a core value for us – we are consistently working towards a [climate-neutral future](#).

Curious? So are we.

We look forward to receiving your online application including the following documents: letter of motivation, CV, short statement of research interests, full academic records (such as Bachelor's and Master's degree transcripts), and names and contact information of at least two references. Please note that we exclusively accept applications submitted through our online application portal. Applications via email or postal services will not be considered.

Review of applications will begin on 1st December, 2025, and continue until the position is filled.

Questions regarding the position should be directed to Prof. Dr. Martin Raubal, mraubal@ethz.ch (no applications).

We would like to point out that the pre-selection is carried out by the responsible

recruiters and not by artificial intelligence.

About ETH Zürich

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