Hossein Moradi

Multi-agent simulation and decision support for smart and resilient mobility

Postdoctoral researcher, SocSIM-K team, Grenoble Informatics Laboratory (LIG), Université Grenoble Alpes

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Bachelor

BSc in civil engineering · K. N. Toosi University of Technology, Tehran — **2008–2012**

ADMISSION national entrance exam, top 1.2 %

Master

MSc in construction engineering and management · Amirkabir University of Technology, Tehran — **2012–2014**

FOCUS operations research; project planning and control

RESULTS GPA 17.3/20; thesis 19.5/20; entrance exam top 0.5 %

Research and teaching

Teaching and research assistant · Amirkabir University of Technology — **2015–2017**

TEACHING operations research; project planning and control (master, about 100 h)

PAPERS
- **Moradi, H.** et al. Evaluating the impacts of virtual organization absorption on the quality of urban private constructions; the system dynamics approach. *Systemic Practice and Action Research*, 2019.
- **Moradi, H.** et al. Toward improving the quality compliance checking of urban private constructions in Iran: an ontological approach. *Sustainable Cities and Society*, 2018.

AWARD ranked first in the national PhD entrance exam, 2015

From construction sites to transport networks: scheduling and allocating resources, now in real time.

PhD

PhD, Doctor of Engineering · Ghent University, SMACS group, TELIN — **2018–2023**

THESIS *The Contribution of Connected and Automated Vehicles to Network Traffic Control*

PROJECT FWO 3G051118, joint with KU Leuven

PAPERS
- **Moradi, H.** et al. Dynamic and heterogeneity-sensitive urban network partitioning: a data-driven technique. *Transportmetrica B: Transport Dynamics*, 2023.
- **Moradi, H.** et al. Dynamically estimating saturation flow rate at signalized intersections: a data-driven technique. *Transportation Planning and Technology*, 2023.
- **Moradi, H.** et al. The contribution of connected vehicles to network traffic control: a hierarchical approach. *Transportation Research Part C*, 2022.
- **Moradi, H.** et al. Proposal of an integrated platoon-based round-robin algorithm with priorities for intersections with mixed traffic flows. *IET Intelligent Transport Systems*, 2021.
- Sasaninejad, S., **Moradi, H.** et al. System content analysis for a two-class queue where service times in a busy period depend on the presence of class-2. *VALUETOOLS 2022, Springer*, 2023.

From vehicles to people: on the same road network, cognitive (BDI) agents decide to evacuate.

Researcher

Research Fellow · RMIT Europe, Barcelona — **2023–2025**

PROJECT C2IMPRESS (Horizon Europe): lead of task 2.4, multi-agent evacuation model with BDI agents and MATSim; lead of task 8.6, uptake of results

PAPERS
- **Moradi, H.** et al. Improving evacuation policies through agent-based modeling and stakeholder engagement in hazard-prone areas. *International Journal of Disaster Risk Reduction*, 2025.
- **Moradi, H.** et al. Enhancing disaster evacuation planning with cognitive agent-based models and co-creation. *European Journal of Sustainable Development*, 2025.
- **Moradi, H.** et al. A framework for constructing agent-based models for evaluating emergency evacuation procedures; a case study applied to Egaleo, Greece. *HICSS*, 2025.

SUPERVISION PhD co-supervision, RMIT University (Australia)

From crisis to adaptation: the same pipeline, from surveys to agents, evaluates climate policies.

Postdoc

Postdoctoral researcher · Université Grenoble Alpes, LIG, SocSIM-K team — **since 2025**

PROJECT JUSTSAFE (Horizon Europe): lead of task 3.1, social digital twin; lead of the UGA part of task 5.1, SPRITE serious game

PAPERS
- **Moradi, H.** et al. A co-creation framework for eliciting human behavior models to support crisis risk management: evidence from Greece. *ISCRAM*, 2026.
- two manuscripts in preparation (serious game for flood risk education; agents for heatwave planning)

TEACHING Python programming (bachelor); artificial intelligence (IUT2)

SUPERVISION co-supervision of a PhD thesis and a master project

EXPERTISE

multi-agent simulation · BDI cognitive agents · human behaviour modelling · participatory modelling · state estimation and traffic control · scheduling and graph methods · operations research · microsimulation

TOOLS AND LANGUAGES

Python, Java, MATLAB, R, SQL · MATSim, GAMA, Jill, BDI-ABM · VISSIM, VISUM, Aimsun, Vensim · Git, QGIS

English and French (fluent); Spanish and Dutch (basic)

SERVICE

Reviewer for *Safety Science*, *IEEE Open Journal of ITS*, *Transportation Research Record*, *Oxford Intersections* and ICTE · webinars and seminars with project partners and beyond · stakeholder workshops