

# Open Ph.D. Position in Complex Infrastructure Systems

*Hiring Organization*  
Princeton University

*Job Location*  
Princeton, New Jersey

*Starting Date*  
Fall 2023

*Application Deadline*  
3 Jan 2023, 11:59 EST

▶ **Apply here**

Dr. Jürgen Hackl in the Department of Civil and Environmental Engineering at Princeton University is looking for highly motivated individuals to pursue doctoral degrees in Civil Engineering with a specialization in Complex Infrastructure Systems. Full financial support will be provided (including tuition and stipend). Funding for travel and participation at conferences will also be provided. The expected starting semester is Fall 2023. Research in one or more of the following areas is expected for successful candidates:

- ▶ **Network Analysis**, e.g., spatial-temporal networks, multilayer/multiplex networks, random graph models, network dynamics, higher-order-networks.
- ▶ **Machine Learning**, e.g., Graph ML, deep and recurrent neural networks, generative models, reinforcement learning, online machine learning.
- ▶ **Computational Modeling**, e.g., natural hazard, deterioration, transportation, risk and reliability, probabilistic modeling, infrastructure systems, digital twins.

**Qualifications:** Students with a Master's degree in Civil Engineering, Mathematics, Physics, Computer Science/Engineering, Electrical Engineering, or other related fields are preferred. Additionally, students with a background in the following areas: network analysis, statistical modeling, machine learning, and computational modeling are preferred. Excellent programming skills are expected. Previous experience with Python, PyTorch, or CUDA is an advantage. Strong team working and critical thinking skills, aptitude for independent and creative work, as well as fluent English written and presentation skills are essential. Minimum application requirements set forth by Princeton University and the Department of Civil and Environmental Engineering can be found here.

**Application instruction:** Please apply for this Ph.D. position officially through the Princeton University application portal, and indicate your interests in the Civil and Environmental Engineering program and the intention of working with Dr. Hackl. Submission deadline is on **January 3, 11:59 pm EST**.

**About the Supervisor:** Dr. Jürgen Hackl is an Assistant Professor at Princeton University. He received his doctorate in Engineering Science from ETH Zurich. His research focuses on complex infrastructure systems, intelligent risk and resilience assessments to climate change, as well as integrated solutions to future challenges facing our cities and society. His research interests lie at the interface between formal methods in network sciences and their integration with prevailing simulation methods, such as digital twins. Additional information can be found on his website.

Should you have questions about the position, please get in touch with Prof. Dr. Jürgen Hackl via email ([hackl@princeton.edu](mailto:hackl@princeton.edu)) with the title "Prospective Ph.D. Student" and include the following information: (i) a motivation letter; (ii) your CV; (iii) a 2-5 page description of your research idea/plan; and (optional iv) a link to a 3-min video of you, presenting your research idea is preferred but not a must.

Princeton University is an equal opportunity employer and all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, sexual orientation, gender identity, national origin, disability status, protected veteran status, or any other characteristic protected by law.