

PhD Position in Projects in Flux: Complex Dynamics of  
Human-Infrastructure Interactions  
University of Sydney

Direct Link: <https://www.AcademicKeys.com/r?job=234644>

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Posted Apr. 15, 2024, set to expire Aug. 13, 2024

**Job Title** PhD Position in Projects in Flux: Complex Dynamics of Human-Infrastructure Interactions

**Department** Faculty of Engineering, School of Project Management  
<https://www.sydney.edu.au/engineering/schools/school-of-project-management.html>

**Institution** University of Sydney  
Sydney, NSW, Australia

**Date Posted** Apr. 15, 2024

**Application Deadline** (April 30, 2024 & On a rolling basis until the position is filled)

**Position Start Date** Fall 2024/Spring 2025

**Job Categories** Graduate Student

**Academic Field(s)** Transportation Engineering  
Sustainable Engineering  
Industrial & Systems Engineering  
Computer Science  
Construction Engineering/Management  
Civil Engineering  
Engineering - Other

**Job Website** <https://www.linkedin.com/feed/update/urn:li:ugcPost:7184368460800425984/>

**Apply By Email** [neda@vt.edu](mailto:neda@vt.edu)

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**Job  
Description**

This fully-funded PhD position offers an exciting opportunity to engage in research from a multidisciplinary perspective. The successful candidate will work closely with scholars in the School of Project Management, including the focus area of Complex Engineering Projects, interact with collaborators in the Faculty of Engineering's Net Zero and Digital Sciences strategic initiatives, and contribute to the "Confluence of Catalysts" research project. Harnessing the synergistic potential of AI and Digital Twins, this project aims to advance our understanding of the complex interplay between humans and infrastructure systems in cities, while developing innovative solutions to address the challenges of sustainable urbanization on a global scale.

You will be expected to:

- Conduct research and inform the development of theories and methodologies.
- Collect, generate, and analyze data using advanced computational techniques and modeling approaches.
- Design and implement AI-driven models to analyze complex human-infrastructure interactions in urban systems.
- Investigate the potential of digital twins as tools for decision making, stakeholder engagement, or optimizing city infrastructure performance and resilience.
- Collaborate with stakeholders from academia, industry, and government agencies to ensure the relevance and impact of the research.
- Contribute to the dissemination of research findings through publications in peer-reviewed journals and presentations at national and international conferences.

You will have:

- Access to state-of-the-art facilities and resources for research.
- Supportive and collaborative research environment alongside experts in the field.
- Networking opportunities for professional development through conferences, workshops, and seminars.
- Potential for publication in high-impact journals and contribution to policy development.

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**Required Qualifications:**

- Bachelor degree with first class honours in related field (e.g., engineering, computer science, or related disciplines; minors in AI, analytics, data science, or computational science are a plus);
- Master's degree by research,
- Master's degree by coursework with an independent research component such as a thesis, dissertation or research project with a minimum overall distinction average.
- An equivalent qualification that demonstrates research experience, excellence and capability.
- Eagerness to work in a multidisciplinary, multi-cultural team.
- Strong background in quantitative research methods, mathematical modelling, data analytics, machine learning, and programming skills (e.g., Python, R, MATLAB).
- Exceptional written and oral communication skills.

**Preferred Qualifications:**

- Master's degree in related field (e.g., engineering, computer science, or related disciplines; minors in AI, analytics, data science, or computational science are a plus).
- Familiarity with AI techniques such as deep learning, natural language processing, and extended reality (VR / AR / MR) visualization is highly desirable.
- Prior interdisciplinary research experience and a strong understanding of sociotechnical and networked systems concepts are preferred for this position.

The preferred start date is 1 Oct 2024 (Research Period 4) or 1 Jan 2025 (Research Period 1).

**How to Apply:**

Interested candidates are invited to submit the following documents via email to Dr. Mohammadi ( [neda@vt.edu](mailto:neda@vt.edu)) with subject line "USYD PhD – Complex Dynamics of Human-Infrastructure Interactions" by the application deadline of 30 April 2024:

- A concise cover letter (1 page) detailing your motivation for pursuing a PhD and research interests, including alignment with the research topic.
- A comprehensive CV highlighting relevant academic achievements, research experiences, and skills, including contact information for two academic/professional references.

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- Copies of academic transcripts showcasing your academic excellence and relevant coursework.
- Representative academic writing (e.g., published paper, thesis chapter).
- A research proposal (1 page) elaborating on the methods and data sources you intend to utilise to address the research topic.

Shortlisted candidates will be notified for interviews shortly after the application deadline. However, applications received after the deadline will be considered on a rolling basis until the position is filled.

**Contact Information**

Please reference Academickeys in your cover letter when applying for or inquiring about this job announcement.

**Contact**

Australia