AI/ML Algorithms Development for Infrastructure Systems
(Ph.D. or Post Doc)
University of South Carolina

Job Title	AI/ML Algorithms Development for Infrastructure Systems (Ph.D. or Post Doc)
Department	Mechanical Engineering
Institution	University of South Carolina
	Columbia SC, South Carolina
Date Posted	Jul. 20, 2024
Application Deadline	Open until filled
Position Start Date	Available immediately
Job Categories	Graduate Student
	Post-Doc
Academic Field(s)	Sustainable Engineering
	Structural Engineering
	Mechanical Engineering
	Engineering Mechanics
	Construction Engineering/Management
	Civil Engineering
	Engineering - Other
Apply By Email	austindowney@sc.edu

Job Description

The ARTS-Lab at the University of South Carolina invites applications for a Ph.D. level Research Assistant position. There is also the potential to hire a Postdoctoral Scholar at this level. The candidate will solve challenges related to AI/ML integration within civil infrastructure monitoring and control systems. The lab does highly innovative and novel work in sensors for infrastructure monitoring (structures, hydrology, geotechnical). These sensors will serve as the foundation from which this applicant will develop AI/ML techniques to develop smart next-generation monitoring and control and

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modeling schemes for the built environment that consider the totality of engineering and natural infrastructure systems. For this position, we seek a highly collaborative, motivated, and talented individual to join our research team to develop and apply cutting-edge AI techniques. We are particularly interested in those with expertise in using large language models (LLMs), decision support tools, time series analysis, topological data analysis (TDA), reinforcement learning, geospatial analysis, or sensor fusion for civil engineering-related challenges.

The ideal candidate will have a master's degree with a background in civil engineering. This may take the form of a master's or undergraduate in civil engineering or relevant background. The applicant could apply for a Ph.D. position in Mechanical or Civil Engineering at the University of South Carolina. There is also an option to obtain a dual degree; this option will be considered on a case-by-case basis.

If you are interested in such a challenging position, please do two things to help you understand the work of the lab. First, read these papers on our unique sensor systems

- https://shorturl.at/YDI0M
- https://shorturl.at/CiYL8
- https://shorturl.at/ah1JT

Second, read these papers on our AI/ML algorithmic approaches to a variety of problems (not limited to infrastructure)

- https://shorturl.at/NFKSx
- https://rb.gy/mey4pm
- https://shorturl.at/o6dE1

If the development of these systems is of interest to you and you possess some of the skills listed above, please reach out to me at austindowney@sc.edu. Please put "AI/ML Algorithms Development for Infrastructure Systems Ph.D. Position" in the subject line of your email. Please send me your CV, cover letter, transcripts, and other application documents as you see fit. Your cover letter should show how your skills align with the project. The desired skills and background in this posting should serve as a starting point. Submission of GRE/ TOEFL/IELTS scores are encouraged but not required.

Contact Information

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Contact   Austin Downey

Mechanical Engineering

University of South Carolina

Columbia, SC