UNIVERSITY OF MINNESOTA
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Postdoctoral Associate Position in AI for Transportation

Position Description

Dr. Seongjin Choi's research group is looking for a highly motivated Postdoctoral Associate in the Department of Civil, Environmental, and Geo-Engineering at the University of Minnesota, Twin Cities. The successful candidate will conduct advanced research at the intersection of artificial intelligence and intelligent transportation systems (ITS), with an emphasis on developing and deploying state-of-the-art Large-Language Models (LLMs), Vision-Language Models (VLMs), and Vision-Language-Action (VLA) models for real-world problems in urban mobility, transportation management, and autonomous driving. Core research themes include generative AI, multimodal learning, robust data analytics, and interpretable decision-making under real-world constraints.

This is a full-time, 12-month appointment with the possibility of extension based on performance and funding availability. Salary will commensurate with the candidate's qualifications and responsibilities and will follow University of Minnesota policies. The position includes health insurance and standard postdoctoral benefits in accordance with University guidelines. For more information, see https://policy.umn.edu/hr/postdocappoint

How to apply

If you're interested, please send me an email at **chois@umn.edu**. Please include **a CV**, **a research statement**, and **academic transcripts**. Please use "Prospective Postdoc --- [Your name]" as your email subject.

Responsibility

- Lead innovative research on VLM/VLA methods and their applications in autonomous driving and ITS problem.
- Design, implement, and rigorously evaluate novel AI models and algorithms for multimodal inputs.
- Build robust pipelines for data curation, preprocessing, and quality control for noisy, imperfect, and heterogeneous transportation datasets.
- Explore neuro-symbolic and/or constraint-aware approaches to improve safety, transparency, reliability, and interpretability of AI-driven decision-making.
- Publish high-impact results in leading transportation and AI conferences and journals.
- Contribute to grant proposal development and help identify external funding opportunities to support ongoing and new research directions.

Minimum Requirements

- Ph.D. in Transportation Engineering, Civil Engineering, Computer Science, Electrical Engineering, Industrial Engineering, or a closely related quantitative discipline.
- Demonstrated research expertise and strong publication record in Generative AI, VLMs and/or VLA models, and their applications in transportation systems and autonomous driving.
- Strong understanding of generative AI, deep learning, and multimodal machine learning, with hands-on experience.
- Excellent programming skills and proficiency with modern deep learning frameworks.
- Strong analytical and problem-solving skills, with the ability to work independently and drive research forward.
- Excellent written and verbal communication skills, including the ability to clearly present technical concepts and research outcomes.

Preferred Requirements

- Experience with LLM/VLM/VLA fine tuning
- Familiarity with autonomous driving or multi-agent simulation environments (e.g., CARLA).
- Domain knowledge in ITS, traffic engineering, autonomous vehicles, robotics, or related areas.
- Experience using cloud platforms for training and deploying AI models.

About the University of Minnesota, Twin Cities

The University of Minnesota, Twin Cities (UMTC), is among the largest public research universities in the United States, offering undergraduate, graduate, and professional students a multitude of opportunities for study and research. The Department of Civil, Environmental, and Geo- Engineering (CEGE) at the University of Minnesota features state-of-the-art facilities, including the Minnesota Traffic Observatory (MTO) and the Minnesota Supercomputing Institute (MSI). MTO is a transportation laboratory focusing on the testing and evaluation of new transportation management and operational strategies and traveler information technologies, where Dr. Choi leads as a co-director. CEGE is one of twelve departments within the College of Science and Engineering, which offers outstanding opportunities for interdisciplinary research due to the unique combination of mathematics, physical sciences, and engineering in one college.

About Dr. Seongjin Choi

Dr. Seongjin Choi is an Assistant Professor in the Department of Civil, Environmental, and Geo- Engineering at the University of Minnesota, Twin Cities. He is also an affiliated faculty at the Center for Transportation Studies (CTS), Data Science Initiative (DSI), and Minnesota Robotics Institute (MnRI). Dr. Choi received his Ph.D., M.S., and B.S. degrees from Korea Advanced Institute of Science and Technology at the Department of Civil and Environmental Engineering in 2021, 2017, and 2015, respectively. Prior to joining the University of Minnesota, he was a postdoctoral researcher at McGill University. His research focuses on applications of AI and GenAI for transportation and mobility systems management and operation and connected and autonomous vehicles.

See more details about Dr. Seongjin Choi at:

- Google Scholar: https://scholar.google.com/citations?user=tyLWFk4AAAAJ&hl=ko
- Website: https://choi-seongjin.github.io/