TIANCHEN HUANG
th20@tamu.edu ● College Station, TX 77840

EDUCATION

Texas A&M University Aug. 2022 – Present
Doctor of Philosophy in Urban and Regional Science

University of Illinois at Urbana-Champaign, College of Fine & Applied Arts Aug. 2018-Dec. 2021
Master of Landscape Architecture

Anhui Agricultural University, School of Forestry & Landscape Architecture Sep. 2013–Jun. 2018
Bachelor of Engineering in Urban and Rural Planning

RELEVANT EXPERIENCE

Texas A&M University
Texas A&M Institute of Data Science (TAMIDS) - Urban AI Lab Aug. 2022 – Present
Position: Research Assistant
Projects: **Artificial Intelligence for Urban Design: Status and Prospects**

- Did a systematic literature review of the application of artificial intelligence in urban design, synthesized key findings to highlight current trends and methodologies
- Proposed a conceptual framework to integrate AI technologies in urban design processes, identifying both the challenges and opportunities, and contributed insights into potential future directions
- Authored the draft of the paper, developing the core concepts, structure, and arguments.

Text-to-image and Image-to-Image Generative Artificial Intelligence in Landscape Conceptual Design via Diffusion Models

- Proposed a framework that incorporates personalized parameter optimization to facilitate conceptual landscape design with text-to-image and image-to-image generative AI
- Generated landscape design including natural parks, city plazas and courtyard gardens by personalized training datasets via diffusion models
- Wrote and edited the manuscript

Texas A&M Transportation Institute Aug. 2022 – Present
Position: Research Assistant
Projects: **Traffic Crash Classification and Analysis in Texas via Deep Learning**

- Identified and classified over 3000 crash images and text description via Convolutional Neural Network and Long Short-Term Memory Network.

Work Zone Vehicle Behavior Evaluation and Threat Alert by Roadside LiDAR

- Developed the algorithm to track the trajectory of vehicles for roadside LiDAR
- Developed the threat alert node for workers in roadside work zones in the Robot Operating System (ROS)

University of Illinois at Urbana-Champaign Nov. 2020- Aug. 2022
Land Use Evolution and Impact Assessment Modeling (LEAM) laboratory
Position: Researcher Assistant
Projects: **IDNR Carbon Sequestration and Protected Areas**

- Classify existing types of land by Convolutional Neural Network
- Applied algorithm-based method to run the scenarios in landcover and carbon sequestration change
- Developed interactive maps and website to visualize the results and scenarios

Text Mining and Analysis of Parks in Chicago based on people's reviews in Google Maps

- Analyze people's behavior and the popularity of parks through BERT

University of Illinois at Urbana-Champaign Jun. 2021- Aug. 2022

The Smart Energy Design Assistance Center (SEDAC)

Position: Researcher Assistant

Projects: **Ameren Workforce Development Project**

- Crawled and analyze data about job posts from websites such as Glassdoor and Indeed automatically and updated the database via routine data crawling

SEDAC Moodle Site Development Project

- Maintained and developed the front-end of the SEDAC website, ensuring optimal performance and user experience

University of Illinois at Urbana-Champaign, Landscape Architecture Department Aug. 2020 -May 2021

Position: Teaching Assistant

Assisted in teaching LA 234 Site Design Studio and LA 335 Community & Open Space Design

- Gave lectures on graphic skills and 3D modeling
- Helped students solve problems on design and technical issues at class and office hours
- Helped the instructor to prepare course materials and carried out site analyses
- Graded students' assignments

RESEARCH INTERESTS

Urban Artificial Intelligence, AI-assisted Urban Design, Intelligent Transportation System

PUBLICATIONS

Zeng, Y., Deal, B., Ask, S., & Huang, T. (2024). The Landscape of Tranquility in Sweden: Lessons for Urban Design from Crowdsourced Data and Deep Learning. Land, 13(4), Article 4. https://doi.org/10.3390/land13040501

Skills

Programming Language: Python, C++, HTML/CSS/JavaScript, R