

# Jose Tupayachi

Knoxville, TN | jtupayac@vols.utk.edu | 661 365 5289 | jtupayachi.github.io

## Education

<b>University of Tennessee, Knoxville</b>   PhD Candidate in Industrial and Systems Engineering Advisor: Dr. Xueping Li, Co-advised: Dr. Haowen Xu	Aug 2024 - Present
<b>University of Tennessee, Knoxville</b>   MS in Industrial and Systems Engineering	Aug 2022 - Jul 2024

## Publications

- **Drone-aided delivery methods, challenges, and the future: A methodological review**  
X Li, J Tupayachi, A Sharmin, M Martinez Ferguson  
*Drones* 7 (3), 191 (2023)
- **Towards next-generation urban decision support systems through AI-powered construction of scientific ontology using large language models—A case in optimizing intermodal freight**  
J Tupayachi, H Xu, OA Omitaomu, MC Camur, A Sharmin, X Li  
*Smart Cities* 7 (5), 2392-2421 (2024)
- **Automating Bibliometric Analysis with Sentence Transformers and Retrieval-Augmented Generation (RAG): A Pilot Study in Semantic and Contextual Search for Customized Literature**  
H Xu, X Li, J Tupayachi, JJ Lian, OA Omitaomu  
*Proceedings of the 2nd ACM SIGSPATIAL International Workshop on Advances in ...* (2024)
- **Better Efficiency on Non-performing Loans Debt Recovery and Portfolio Valuation Using Machine Learning Techniques**  
J Tupayachi, L Silva  
*Production and Operations Management: POMS Lima, Peru, December 2-4, 2021* (2022)
- **A Simulation-Based Real-Time Deep Reinforcement Learning Approach for Fighting Wildfires**  
J Tupayachi, MM Ferguson, X Li  
*2024 Annual Modeling and Simulation Conference (ANNSIM), 1-12*

## Funded Projects Developer

<b>RECOIL</b>   Cognitive Freight Transportation Digital Twin for Resiliency and Emission Control Through Optimizing Intermodal Logistics <b>Funding Agency:</b> U.S. Department of Energy's Advanced Research Projects Agency-Energy (ARPA-E)	Nov 2021 – Present
<b>SmartShots</b>   Cross-Platform App to Improve Childhood Vaccination Rates in TN <b>Funding Agency:</b> Tennessee Department of Health	December 2022 – Present
<b>Active Caregiver's Toolkit (ACTAPP)</b>   Mobile Application to Promote Physical Activity Among Rural Appalachian Caregivers at Risk for Cardiovascular Disease (CVD) <b>Funding Agency:</b> Hillman Emergent Innovation (HEI)	Jul 2024 - Present

## Awards & Scholarships

- **51<sup>st</sup> Conference on Computers and Industrial Engineering (CIE51)** *Best Paper Award: "Emerging AI and Cognitive Digital Twin Technologies Towards Low-Carbon Multimodal Freight Transport Systems – Sustainable Transport Systems"*  
Sydney, Australia December 9–11, 2024
- **IISE Data Analytics & Information Systems (DAIS) Student Mobile App Competition**  
*2024 Winners - SmartShots Project, Montreal*
- **HIDA Helmholtz Visiting Researcher**  
*Year: 2024 - Awarded but not taken.*

## Work Experience

<b>Data Engineer</b>   Indra – Full-time	Jan 2022 – Aug 2022
<b>Data Analyst</b>   Enel Group – Full-time	Nov 2020 – Dec 2021