

Surendra Reddy Kancharla, Ph.D.

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Employment

- 2022 –  **Senior Research Associate**, “Friedrich List” Faculty of Transport and Traffic Sciences, Technische Universität Dresden.
- 2021 – 2022  **Postdoctoral Researcher**, Lyles School of Civil Engineering, Purdue University.
- 2019 – 2020  **Senior Project Officer**, Center for Industrial Consultancy and Sponsored Research, Indian Institute of Technology Madras.
- 2014 – 2019  **Teaching and Research Assistant**, Department of Civil Engineering, Indian Institute of Technology Madras.

Education



- 2013 – 2020  **M.Tech. & Ph.D.** in Civil Engineering
Indian Institute of Technology Madras, Chennai, India
Thesis title: *Vehicle Routing Problems in Sustainable Urban Freight Transport: Model Formulations and Solution Algorithms*
- 2009 – 2013  **B.Tech.** in Civil Engineering
Sri Venkateswara University, Tirupati, India

Awards and Achievements

- 2025  Project selected for **Academic Grant Program**, NVIDIA.
- 2020  **K. Ganesh and Meena Ganesh scholarship for entrepreneurship development**, Indian Institute of Technology Madras.
- 2019  **Institute Research Award**, Indian Institute of Technology Madras.
- 2016 & 2018  **Student Travel Grant**, Indian Institute of Technology Madras.
- 2017  **Alumni Funded Travel Grant**, Indian Institute of Technology Madras.
- 2015  **Study Visit Grant to visit The University of Melbourne, Australia**, Volvo Research & Educational Foundations (VREF), Sweden.
- 2012  **2nd prize** in paper presentation event as part of TRACE 2k12 (XIII National Level Student Technical Symposium), RGM CET, Nandyala.
- 2011  **3rd prize** in paper presentation event as part of Tathva '11 (Techno Management Fest), NIT Calicut.

Research Publications

Journal Articles

- 1 Fernandez, P., **Kancharla, S. R.**, Lin, D.-Y., & Waller, S. T. (2026). Decomposing Urban Traffic Flows: A Multi-Stage Approach to Model Heavy Vehicle Movements in Greater Sydney. *Transportation Research Record*.  doi:[10.1177/03611981251387124](https://doi.org/10.1177/03611981251387124)
- 2 Kirubakaran, B., Pahwa, A., **Kancharla, S. R.**, & Waller, S. T. (2026). A holistic continuous approximation framework for strategic last-mile distribution planning. *Transportation Research Interdisciplinary Perspectives*, 35, 101720.  doi:[10.1016/j.trip.2025.101720](https://doi.org/10.1016/j.trip.2025.101720)

- 3 **Kancharla, S. R.**, Woensel, T. v., Waller, S. T., & Ukkusuri, S. V. (2024). Meal delivery routing problem with stochastic meal preparation times and customer locations. *Networks and Spatial Economics*, 24, 997–1020. [doi:10.1007/s11067-024-09643-1](https://doi.org/10.1007/s11067-024-09643-1)
- 4 Hamim, O. F., **Kancharla, S. R.**, & Ukkusuri, S. V. (2023). Mapping sidewalks on a neighborhood scale from street view images. *Environment and Planning B: Urban Analytics and City Science*, 51(4), 823–838. [doi:10.1177/23998083231200445](https://doi.org/10.1177/23998083231200445)
- 5 Middela, M. S., Srinath, M., **Kancharla, S. R.**, Gitakrishnan, R., Rokom, P., Subrahmanya Kiran, S., & Gayathri, D. (2022). Complete LCA of battery electric and Bharat Stage-VI vehicles for freight trips. *Transportation Research Part D: Transport and Environment*, 110, 103398. [doi:10.1016/j.trd.2022.103398](https://doi.org/10.1016/j.trd.2022.103398)
- 6 **Kancharla, S. R.**, & Gitakrishnan, R. (2020a). Electric vehicle routing problem with non-linear charging and load-dependent discharging. *Expert Systems With Applications*, 160, 113714. [doi:10.1016/j.eswa.2020.113714](https://doi.org/10.1016/j.eswa.2020.113714)
- 7 **Kancharla, S. R.**, & Gitakrishnan, R. (2020b). Simulated Annealing Algorithm for Multi Depot Two-Echelon Capacitated Vehicle Routing Problem. *European Transport*, (78). [doi:10.48295/ET.2020.78.8](https://doi.org/10.48295/ET.2020.78.8)
- 8 **Kancharla, S. R.**, & Gitakrishnan, R. (2019a). Multi-depot Two-Echelon Fuel Minimizing Routing Problem with Heterogeneous Fleets: Model and Heuristic. *Networks and Spatial Economics*, 19(3), 969–1005. [doi:10.1007/s11067-018-9437-7](https://doi.org/10.1007/s11067-018-9437-7)
- 9 **Kancharla, S. R.**, & Gitakrishnan, R. (2018a). An Adaptive Large Neighborhood Search Approach for Electric Vehicle Routing with Load-Dependent Energy Consumption. *Transportation in Developing Economies*, 4(2), 10. [doi:10.1007/s40890-018-0063-3](https://doi.org/10.1007/s40890-018-0063-3)
- 10 **Kancharla, S. R.**, & Gitakrishnan, R. (2018b). Incorporating driving cycle based fuel consumption estimation in green vehicle routing problems. *Sustainable Cities and Society*, 40, 214–221. [doi:10.1016/j.scs.2018.04.016](https://doi.org/10.1016/j.scs.2018.04.016)

Journal Articles (Under review)

- 1 **Kancharla, S. R.**, Qiu, E., Koks, E., Greenwood, I., Anyala, M., & Waller, S. T. (2026). *Connectivity thresholds and the road dividend: Terrain-sensitive multimodal accessibility in Papua New Guinea.*
- 2 **Kancharla, S. R.**, Bešinović, N., & Waller, S. T. (2025). *Quantum computing for vehicle routing: Promise, hype, and reality.*
- 3 Lin, D.-Y., Yin, P.-L., **Kancharla, S. R.**, & Waller, S. T. (2025). *Three-stage decomposition heuristic for remote-sensing satellite mission scheduling.*

Conferences

- 1 **Kancharla, S. R.**, Bednarz, T., & Waller, S. T. (2026). Conversational AI agent for transportation planning. In *NVIDIA GPU Technology Conference (GTC)*, San Jose, CA, USA.
- 2 **Kancharla, S. R.**, Lin, D.-Y., & Waller, S. T. (2026). Revealing transit patterns through modal competition: A framework for multi-modal network OD demand estimation. In *World Conference on Transport Research (WCTR)*, Toulouse, France.
- 3 Fernandez, P., **Kancharla, S. R.**, Lin, D.-Y., & Waller, S. T. (2025). Decomposing Urban Traffic Flows: A Multi-Stage Approach to Model Heavy Vehicle Movements in Greater Sydney. In *104th Annual Meeting of the Transportation Research Board*, Washington D.C., USA.

- 4 **Kancharla, S. R.**, Fatima, A. A., & Satish, V. U. (2023). Sentiment Analysis of COVID related transit policies using Twitter data in Africa: A case study of Lagos. In *102nd Annual Meeting of the Transportation Research Board*, Washington D.C., USA.
- 5 **Kancharla, S. R.**, & Gitakrishnan, R. (2019b). Simulated Annealing Algorithm For Multi Depot Two- Echelon Capacitated Vehicle Routing Problem. In *98th Annual Meeting of the Transportation Research Board*, Washington D.C., USA.
- 6 Middela, M. S., Srinath, M., Subrahmanya Kiran, S., **Kancharla, S. R.**, Gayathri, D., & Gitakrishnan, R. (2019). Estimating Emissions from Urban Freight Trips. In *15th World Conference on Transport Research - WCTR 2019*, Mumbai, India.
- 7 Gitakrishnan, R., **Kancharla, S. R.**, & Manju, M. M. (2018). Electric Future for Buses? Influence of Size, Battery Capacity, and Route Length. In *2018 INFORMS International Conference*, Taipei, Taiwan.
- 8 **Kancharla, S. R.**, & Gitakrishnan, R. (2018c). Load Dependent Electric Vehicle Routing Problem With Time Windows Considering Nonlinear Charging Function. In *6th INFORMS Transportation Science and Logistics (TSL) Society Workshop*, Hong Kong.
- 9 **Kancharla, S. R.**, & Gitakrishnan, R. (2018d). Multi-depot Electric Vehicle Routing Problem with Time Windows considering Non-linear Charging and Discharging. In *2018 Annual Meeting of the Institute for Operations Research and the Management Sciences (INFORMS)*, Phoenix, USA.
- 10 **Kancharla, S. R.**, & Gitakrishnan, R. (2017a). An Adaptive Large Neighbourhood Search Approach for Electric Vehicle Routing with Load-dependent Energy Consumption. In *4th Conference of the Transportation Research Group of India*, Mumbai, India.
- 11 **Kancharla, S. R.**, & Gitakrishnan, R. (2017b). Incorporating Driving Cycle Based Fuel Estimation For Green Vehicle Routing Problem. In *96th Annual Meeting of the Transportation Research Board*, Washington D.C., USA.
- 12 **Kancharla, S. R.**, & Gitakrishnan, R. (2016). Multi-depot Two Echelon Pollution Minimizing Routing Problem with Heterogeneous Vehicles. In *2016 Annual Meeting of the Institute for Operations Research and the Management Sciences (INFORMS)*, Nashville, USA.

Miscellaneous


Academic Services

- Reviewer for Journal of Big Data Analytics in Transportation - Expert Systems with Applications - Computers & Industrial Engineering - Computers & Operations Research - IEEE Transactions on Vehicular Technology - Environmental Science and Pollution Research - Journal of The Institution of Engineers (India): Series A - Transportation Research Record - Sustainable Cities and Society - Sustainability - Mathematics - Scientific Reports - Transportmetrica B: Transport Dynamics - Applied Sciences - Engineering Applications of Artificial Intelligence - Transportation Research Part E - Swarm and Evolutionary Computation - Supply Chain Analytics - Transportation Letters - Transportation Research Part D - The Journal of Supercomputing - Environment and Planning B: Urban Analytics and City Science.


Leadership Activities


- 2014 – 2015 ■ **Postgraduate Department Coordinator**, Mentoring for individual TRansformation (MiTR), Indian Institute of Technology Madras.


Miscellaneous (continued)


2011 – 2012  **Civil Engineering Association Secretary**, Department of Civil Engineering, K.S.R.M. College of Engineering.

Skills

Coding  Python (NumPy, NetworkX, Pandas, PyTorch, CuPy, Flask), CUDA C, R, Java, L^AT_EX, GAMS

Optimization  CPLEX, GUROBI

Web Dev.  HTML, CSS, JavaScript

Misc.  MySQL, QGIS, PTV VISSIM, aimsun