KRISHNA MURTHY GURUMURTHY, PH.D.

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EDUCATION

The University of Texas at Austin, USA **January 2018 – December 2020**

Doctor of Philosophy in Civil Engineering (*Transportation Engineering*) GPA: 3.91 / 4.00

Dissertation Shared Autonomous Vehicle System Designs for Major Metro Areas: An Examination of Geofencing, Road-Pricing, Drivetrain, Dynamic Ride-Sharing, and Stop-Location Decisions

The University of Texas at Austin, USA **January 2018 – May 2020**

Master of Science in Statistics and Data Sciences GPA: 3.96 / 4.00

The University of Texas at Austin, USA **August 2016 – December 2017**

Master of Science in Civil Engineering (*Transportation Engineering*) GPA: 3.81 / 4.00

Thesis Perceptions and Preferences of Autonomous and Shared Autonomous Vehicles: A Focus on Dynamic Ride-Sharing

National Institute of Technology Karnataka (NITK), India **July 2012 – May 2016**

Bachelor of Technology in Civil Engineering GPA: 8.92 / 10.00

EXPERIENCE

Graduate Research Assistant **Fall 2016 – Present**

Supervisor: Dr. Kara Kockelman *UT Austin*

- Worked on two projects sponsored by the Texas Department of Transportation (0-6847 & 0-6838) from 2016-18, both focusing on autonomous and shared autonomous vehicles (S/AVs).
- Mentored a graduate student on an NSF-funded SRN project to simulate and forecast SAV travel behavior for the Minneapolis-St Paul region using MATSim.
- Currently charged with an ANL project focusing on transportation planning/forecasting for SAVs

Research Aide – Technical **Summer 2018**

Supervisor: Dr. Joshua Auld *Argonne National Laboratory*

- Tasked with developing algorithms for the control of shared-automated vehicle fleets and implementing the control & optimization algorithms in ANL's POLARIS.
- This 3-month internship involved understanding POLARIS, refreshing C++ syntax, developing an SAV module that integrates into the existing simulator to preserve feedback, and verifying SAV behavior through both code logic and visual tracing.

PROGRAMMING LANGUAGES

C++ • MATLAB • Java • R • Python • SQL

SOFTWARE SKILLS

TransCAD • Microsoft Office • ArcGIS & QGIS • STATA, SPSS & SAS • Mathematica • MicroStation & GEOPAK

PUBLICATIONS

1. Yan, H., Kockelman, K.M., and **Gurumurthy, K.M.** Shared Autonomous Vehicle Fleet Performance: Impacts of Parking Limitations and Trip Densities. Forthcoming in *Transportation Research Part D*.
2. **Gurumurthy, K.M.**, Kockelman, K.M., and Zuniga-Garcia, N. 2020. First-Mile-Last-Mile Collector-Distributor System using Shared Autonomous Mobility. *Transportation Research Record*.
3. **Gurumurthy, K.M.**, de Souza, F., Enam, A., and Auld, J. 2020. Integrating the Supply and Demand Perspectives for a Large-Scale Simulation of Shared Autonomous Vehicles. *Transportation Research Record* 2674 (7): 181-192.
4. Becker, H., Becker, F., Abe, R., Bekhor, S., Belgiawan, P.F., Compostella, J., Frazzoli, E., Fulton, L.M., Garrick, N., Bicuda, D.G., **Gurumurthy, K.M.**, Hensher, D.A., Joubert, J.W., Kockelman, K.M., Kroger, L., Kuhnimhof, T., Vine, S.L., Malik, J., Marczuk, K., Nasution, R.A., Rich, J., Carrone, A.P., Shen, D., Shiftan, Y., Tirachini, A., Verdis, D.,

Wong, Y.Z., Zhang, M., Bosch, P.M. and Axhausen, K.W. 2020. Impact of Vehicle Automation and Electric Propulsion on Production Costs for Mobility Services Worldwide. *Transportation Research Part A* 138: 105-126.

5. de Souza, F., **Gurumurthy, K.M.**, Auld, J., and Kockelman, K.M. 2020. A Repositioning Method for Shared Autonomous Vehicles Operation. *Procedia Computer Science* 170: 791-798.
6. **Gurumurthy, K.M.** and Kockelman, K. 2020. Modeling Americans' Autonomous Vehicle Preferences: A Focus on Dynamic Ride-Sharing, Privacy & Long-Distance Mode Choices. *Technological Forecasting and Social Change* 150 (119792).
7. **Gurumurthy, K.M.**, Kockelman, K. and Simoni, M.D. 2019. Benefits & Costs of Ride-Sharing in Shared Automated Vehicles across Austin, Texas: Opportunities for Congestion Pricing. *Transportation Research Record* 2673 (6): 548-556.
8. Simoni, Michele D., Kockelman, K., **Gurumurthy, K.M.** and Bischoff, J. 2019. Congestion Pricing in a World of Self-Driving Vehicles: An Analysis of Different Strategies in Alternative Future Scenarios. *Transportation Research Part C: Emerging Technologies* 98: 167-185.
9. **Gurumurthy, K.M.** and Kockelman, K. 2018. Analyzing the Dynamic Ride-Sharing Potential for Shared Autonomous Vehicle Fleets using Cellphone Data from Orlando, Florida. *Computers, Environment and Urban Systems* 71: 177-185.

MENTORING EXPERIENCE

Graduate students: Matt Dean (UT) • Ty Wellik (at General Motors) • Haonan Yan (at China's HiRain Technologies) • Adam Nodjomian (at Alliance Transportation Group)

Undergraduate students: Hyungseung (Jeffrey) Hahm • Evelyn Reyes (GLUE)

BOOK CHAPTERS

- **Gurumurthy, K.M.**, Kockelman, K.M., and Loeb, B.J. 2019. Sharing Vehicles & Sharing Rides in Real Time: Opportunities for Self-Driving Fleets. Chapter Four in *Advances in Transport Policy and Planning: The Sharing Economy and the Relevance for Transport*, 4: 59-85 (Ed. Elliot Fishman).
- Levin, M., Bansal, P., Patel, R., Boyles, S., Kockelman, K.M., Singh, A., Fritz, H., Clements, L., **Gurumurthy, K.M.**, and Quarles, N. 2018. Other Findings and Related Work. Chapter 18 in *Smart Transport for Cities & Nations: The Rise of Self-Driving & Connected Vehicles* (Eds. Kara Kockelman and Stephen Boyles).

CO-CURRICULARS

Eno Fellow, Eno Center for Transportation	Class of 2019
Core Team Member, UT Austin Traffic Bowl Team	2017 & 2019
Friend, TRB's AHB30 Standing Committee on Vehicle-Highway Automation	2019 – Present
Friend, TRB's ADB40 Standing Committee on Transportation Demand Forecasting	2017 – Present
Member & Ex-Officer, Women's Transportation Seminars, UT Austin Student Chapter	Fall 2017 – Present
Member & Past President, Institute of Transportation Engineers, UT Austin Student Chapter	Fall 2016 – Present
Member & Ex-Officer, Intelligent Transportation Society of America, UT Austin Student Chapter	Fall 2016 – Present
Mentor, Graduates Linked with Undergraduates in Engineering (GLUE)	Fall 2017

PEER REVIEWER - JOURNALS

Transportation Research – Part A, Part B, Part C, Part D • *Computers, Environment and Urban Systems* • *Transport Policy* • *Transportation* • *Transportation Research Record: Journal of the Transportation Research Board*

AWARDS & ACHIEVEMENTS

- Member of UT Austin Traffic Bowl Team that won the international championship in 2019 and the Texas district championship in 2017. We were runners-up in the 2017 international championships.
- Received the Conference of Minority Transportation Officials (COMTO) scholarship to attend the 2019 Eno Transportation Center's Future Leaders (weeklong) Development Conference in Washington, D.C.
- Graduate Research Award by TRB's Airport Cooperative Research Program (2018-2019).
- Outstanding Student Award at TexITE (Texas Institute of Transportation Engineers) Spring Meeting, 2018.
- Awarded the CAS-ITE (2017) and ITS Texas (2017, 2018) scholarships, and Texas ITE district fellowship (2017).