KRISHNA MURTHY GURUMURTHY

E: gkmurthy10@utexas.edu L: linkedin.com/in/krishna-murthy W: gkmurthy10.github.io

EDUCATION

The University of Texas at Austin, USA *expected* August 2020

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

Courses 'Dynamic Traffic Assignment' and 'Bayesian Statistical Methods'

The University of Texas at Austin, USA 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

Courses 'Statistical Modeling I', 'Advanced Theory of Traffic Flow', 'Optimization 1', 'Design and Evaluation of Ground-based Transportation Systems', 'Sensors and Signal Interpretation', 'Transportation Network Analysis', 'Urban Transportation Planning' and 'Linear Regression and Discrete Choice Methods'

National Institute of Technology Karnataka (NITK), India May 2016

Bachelor of Technology in Civil Engineering GPA: 8.92 / 10.00

Courses 'Highway and Traffic Engineering', 'Railways, Tunnels, Harbors and Airports' and 'Traffic Engineering and Management'.

EXPERIENCE

Graduate Research Assistant Supervisor: Dr. Kara Kockelman Fall 2016 – Present

Responsible for an ANL project focusing on transportation planning/forecasting for autonomous vehicles *UT Austin*

Research Aide – Technical Supervisor: Dr. Joshua Auld Summer 2018

Tasked with developing algorithms for the control of shared-automated vehicle fleets and implementing the control & optimization algorithms in ANL's POLARIS *Argonne National Laboratory*

Graduate Teaching Assistant Course Instructor: Dr. Kara Kockelman & Ms. Heidi Ross* Spring 2017 & 2018*

Responsible for students' performance, grading, lab lectures (on MicroStation and GEOPAK) and final design-project outcome in a capstone course for transportation engineering *UT Austin*

Project Research Intern Supervisors: Drs. Tom V Mathew & Gowri Asaithambi Spring 2016 – Summer 2016

Tasked with devising incorporating traffic models into existing simulation software *IIT Bombay*

Summer Research Intern Supervisor: Dr. Tom V Mathew Summer 2015

Tasked with devising and programming microscopic traffic model and simulation software in MATLAB *IIT Bombay*

PAPERS & PRESENTATIONS (selected)

- **Gurumurthy, K.M.**, Kockelman, K. and Simoni, M.D. 2018. Benefits & Costs of Ride-Sharing in Shared Automated Vehicles Across Austin, Texas: Opportunities for Congestion Pricing. Accepted for presentation at the 98th Annual Meeting of the Transportation Research Board and under review for publication in *Transportation Research Record.*
- Mahmoud, J., Auld, J., and **Gurumurthy, K.M.** 2018. Intra-Household Fully Automated Vehicles Assignment Problem: Model Development and Case Study. Under review for presentation at the 98th Annual Meeting of the Transportation Research Board.
- Simoni, Michele D., Kockelman, K., **Gurumurthy, K.M.** and Bischoff, J. 2018. Congestion Pricing in a World of Self-Driving Vehicles: An Analysis of Different Strategies in Alternative Future Scenarios. Under review for publication in *Transportation Research Part C: Emerging Technologies*.
- 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., *et al*. 2018. Impact of Vehicle Automation and Eletric Propulsion on Production Costs for Mobility Services Worldwide. *Working Paper.*
- **Gurumurthy, K.M.** and Kockelman, K. 2018. Modeling Americans' Autonomous Vehicle Preferences: A Focus on Dynamic Ride-Sharing, Privacy & Long-Distance Mode Choices. Accepted for presentation at the 98th Annual Meeting of the Transportation Research Board and under review for publication in *Transportation Research Part A: Policy & Practice*.
- **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.

- Invited Speaker, at the Machine Intelligence in Autonomous Vehicles Summit held in San Francisco, presentation titled "Anticipating a World of Shared Fully-Automated Vehicles" on behalf of Dr. Kara Kockelman, 23-24 March, 2017.

BOOK CHAPTERS & TECHNICAL REPORTS

- Co-author of Chapter 18 in "Smart Transport for Cities & Nations: The Rise of Self-Driving & Connected Vehicles". 2018. Kara Kockelman and Stephen Boyles (Eds). Published by CreateSpace on Amazon.com, August 2018. ISBN-10:0692121501, ISBN-13: 978-0692121504.
- Kockleman, K., Boyles, S., Sturgeon, P., Claudel, C., ... **Gurumurthy, K.M.**, He, D., ... and Yarmohammadisatri, S. "Phase 2 - Bringing Smart Transport to Texans: Ensuring the Benefits of a Connected and Autonomous Transport System in Texas - Final Report". Technical Report FHWA/TX-18/0-6838-3, TxDOT, CTR, UT Austin, TX, July 2018.
- Kockelman, K., Loftus-Otway, L., Stewart, D., Nichols, A., Wagner, W., Boyles, S., Levin, M., Liu, J., Perrine, K., Kilgore, S., and **Gurumurthy, K.M.** "Best Practices for Modifying Transportation Design, Planning, and Project Evaluation in Texas." Technical Report 0-6847-P1, TxDOT, CTR, UT Austin, TX, March 2017.

SOFTWARE SKILLS

MATLAB • TransCAD • Java • Microsoft Office Suite • R • ArcGIS • C# • C++ • Python

SELECT RESEARCH PROJECTS

Implementing Shared Autonomous Vehicles in POLARIS and Assessing the Impact of Dynamic Ride-Sharing in Chicago Fall 2018 – Present

Supervisor: Dr. Kara Kockelman (Sponsored by Argonne National Laboratory) *UT Austin*

POLARIS, an agent-based discrete event simulator developed by the Argonne National Laboratory, is being enhanced to simulate shared autonomous vehicles with dynamic ride-sharing capabilities. Policies such as geofencing the service, pre-determined pick-up and drop-off spots, and congestion pricing are being analyzed to understand the future of mobility.

CO-CURRICULARS & VOLUNTEERING

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

Lead Event Organizer, Texas Student Leadership Summit Fall 2017

Core Team Member, UT Austin Traffic Bowl Team Spring 2017 – Summer 2017

PEER REVIEWER - JOURNALS

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

AWARDS & ACHIEVEMENTS

- Awarded the Graduate Research Award by the Airport Cooperative Research Program for the period 2018-19
- Received the Outstanding Student Award at TexITE Spring Meeting in 2018.
- Awarded the CAS-ITE and ITS Texas scholarships in 2017.
- Awarded the Texas district ITE fellowship in 2017.
- Part of the UT Austin Traffic Bowl Team that won the Texas district championship in Spring 2017 and came second in the International championships in Summer 2017

MENTEES

Hyungseung (Jeffrey) Hahm • Evelyn Reyes (GLUE)