

# KRISHNA MURTHY GURUMURTHY

E: [gkmurthy10@utexas.edu](mailto:gkmurthy10@utexas.edu)

L: [linkedin.com/in/krishna-murthy](https://www.linkedin.com/in/krishna-murthy)

W: [gkmurthy10.github.io](https://github.com/gkmurthy10)

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## EDUCATION

### The University of Texas at Austin, USA

expected August 2020

Doctor of Philosophy in Civil Engineering (*Transportation Engineering*)

GPA: 3.87 / 4.00

### The University of Texas at Austin, USA

expected May 2020

Master of Science in Statistics and Data Sciences

GPA: 3.94 / 4.00

### 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](#)

### National Institute of Technology Karnataka (NITK), India

May 2016

Bachelor of Technology in Civil Engineering

GPA: 8.92 / 10.00

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## 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

Spring '19

Responsible for students' performance in designing, implementing, collecting and modeling survey data focused on transportation engineering and policy.

UT Austin

### Graduate Teaching Assistant

Course Instructor: Dr. Kara Kockelman & Ms. Heidi Ross\*

Spring '17, '18\* & '19

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

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## PUBLICATIONS

- **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. Forthcoming in *Transportation Research Record*.
  - 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. *Transportation Research Part C: Emerging Technologies* 98: 167-185.
  - **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.
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## PAPERS & PRESENTATIONS (selected)

- Invited Speaker, at the SESYNC Pursuit: People, Land, Water and Fish - Integrating Social and Environmental Models in the Chesapeake Watershed held in Annapolis, Maryland, presentation titled "Modeling Emerging Modes and Advanced Policies in MATSim", 21-22 February, 2019.
- Mahmoud, J., Auld, J., and **Gurumurthy, K.M.** 2018. Intra-Household Fully Automated Vehicles Assignment Problem: Model Development and Case Study. Presented at the 98th Annual Meeting of the Transportation Research Board.
- **Gurumurthy, K.M.** and Kockelman, K. 2018. Modeling Americans' Autonomous Vehicle Preferences: A Focus on Dynamic Ride-Sharing, Privacy & Long-Distance Mode Choices. Presented at the 98<sup>th</sup> Annual Meeting of the Transportation Research Board and under review for publication in *Technological Forecasting and Social Change*.

- Selected Speaker, at the TRB Workshop on Doctoral Research in Transportation Modeling and Travel Behavior held in Washington, D.C., presentation titled "A System of Shared Autonomous Vehicles for Chicago: Anticipating Impacts at Multiple Stages of Adoption", 13 January, 2019.

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## 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.
- Kockelman, 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.

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## SOFTWARE SKILLS

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

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## 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.

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## CO-CURRICULARS & VOLUNTEERING

<b>Marketing Coordinator</b> , UT Apartment's Tenant Advisory Board	Spring 2019 - Present
<b>Friend</b> , TRB's ADB40 Committee on Transportation Demand Forecasting	Spring 2018 - Present
<b>Volunteer</b> , Women's Transportation Seminars – Heart of Texas Annual Gala	Spring 2018
<b>Member &amp; Ex-Officer</b> , Women's Transportation Seminars, UT Austin Student Chapter	Fall 2017 – Present
<b>Member &amp; Past President</b> , Institute of Transportation Engineers, UT Austin Student Chapter	Fall 2016 – Present
<b>Member &amp; Ex-Officer</b> , Intelligent Transportation Society of America, UT Austin Student Chapter	Fall 2016 – Present
<b>Mentor</b> , Graduates Linked with Undergraduates in Engineering ( <u>GLUE</u> )	Fall 2017
<b>Lead Event Organizer</b> , Texas Student Leadership Summit	Fall 2017
<b>Core Team Member</b> , UT Austin Traffic Bowl Team	Spring 2017 – Summer 2017

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## PEER REVIEWER - JOURNALS

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

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## 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 (2017), ITS Texas scholarships (2017, 2018), and the Texas district ITE fellowship (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
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