

# KRISHNA MURTHY GURUMURTHY

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## EDUCATION

### The University of Texas at Austin, USA

expected December 2020

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

GPA: 3.90 / 4.00

### The University of Texas at Austin, USA

May 2020

Master of Science in Statistics and Data Sciences

GPA: 3.96 / 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.**, de Souza, F., Enam, A., and Auld, J. 2020. Integrating the Supply and Demand Perspectives for a Large-Scale Simulation of Shared Autonomous Vehicles. Forthcoming in *Transportation Research Record*.
  - **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).
  - **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.
  - 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.
  - **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.

- 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

- 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).
- 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.

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## PROGRAMMING LANGUAGES

C++ • MATLAB • Java • R • Python • C#

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## SOFTWARE SKILLS

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

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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

**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

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## 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*

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## AWARDS & ACHIEVEMENTS

- Part of the UT Austin Traffic Bowl Team that won the international championship in 2019 and the Texas district championship in 2017 and were runner-ups in the international championships in 2017.
  - Received the Conference of Minority Transportation Officials (COMTO) scholarship to attend the 2019 Eno Future Leaders Development Conference in Washington, D.C.
  - 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).
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