Natalia Zuniga-Garcia

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Qualifications

- Interest in statistics, data science, and machine learning with a strong transportation engineering background.
- Excellent written and verbal communication skills with experience in presentations for technical and non-technical individuals.
- A fast and passionate learner, solution-oriented, with excellent collaboration, interpersonal, and leadership skills.

Education

- **The University of Texas at Austin** *Ph.D. in Civil Engineering | Transportation* May 2020 *(Expected)*
- **The University of Texas at Austin** *M.Sc. in Statistics and Data Sciences* (GPA: 3.814) May 2018
- **The University of Texas at Austin** *M.Sc. in Civil Engineering | Infrastructure Materials* (GPA: 3.709) May 2017
- **University of Costa Rica** *B.Sc. in Civil Engineering* (GPA: 8.46/10) December 2012

Professional Experience

- **Graduate Research Assistant** *The University of Texas at Austin (Prof.: Randy B. Machemehl, Jorge A. Prozzi) 2*015 - Present
  - Perform statistical modeling of transportation data for several funded research projects.
  - Authored and co-authored more than 20 research reports, journal publications, and conference proceedings.
- **Teaching Assistant** *The University of Texas at Austin - Cockrell School of Engineering*
  - CE 392M Public Transportation Engineering *(Prof.: Dr. Randy B. Machemehl)* Fall 2018/Fall 2019
  - CE 367P Pavement Design and Performance *(Prof.: Dr. Jorge A. Prozzi)* Spring/Fall 2016
- **Research Engineer** *University of Costa Rica - Sustainable Urban Development Program (ProDUS)* 2013 - 2014
  - Used Geographic Information Systems (GIS) and remote sensing in urban development projects.

Honors and Awards

- **2019-2020 Graduate Research Award** Airport Cooperative Research Program, Transportation Research Board (TRB) *2019*
- **2019 Mary Kate Collins Memorial Endowed Presidential Scholarship in Civil Engineering**, UT-Austin *2019*
- **WTS Diane Woodend Jones Leadership Legacy Scholarship** Women's Transportation Seminar (WTS), International *2018*

Notable Research Projects

- **Transit in the Context of New Transportation Paradigms** (D-Stop) Jan. 2019 - Present
  - Cleaning and mining of data from more than 3 million dock-less bikes and scooters trips in Austin, Texas.
  - Use of spatial statistical models to evaluate the impact of dock-less scooters on public transportation demand.
- **First-Mile-Last-Mile Collector-Distributor System using Shared Autonomous Vehicles (SAVs)** Jan. 2019 - Present
  - Use agent-based simulation (MATSim) to evaluate operations impacts of using SAVs as a collector-distributor transit system.
- **Evaluation Ride-Sourcing Search Frictions and Driver Productivity** Jan. 2018 - Aug. 2018
  - Cleaning and mining of data from more than 1.5 million ride-sourcing trips, collected by an Austin based e-hailing company.
  - Used big data statistical models to assess ride-sourcing search frictions, driver productivity, and demand density.
- **Economic Analysis of Pavement Preservation Techniques** (TxDOT) Mar. 2016 - Aug. 2016
  - Implemented a stochastic life-cycle cost analysis of pavement preservations techniques, using a Monte Carlo simulation.

Selected Publications

3. Gurumurthy, K.M., K.M. Kockelman, and **N. Zuniga-Garcia**. First-Mile-Last-Mile Collector-Distributor System using Shared Autonomous Mobility. Under review for publication in *Transportation Research Record*.

2. Zuniga-Garcia, N., M. Tec, J.G. Scott, N. Ruiz-Juri, and R.B. Machemehl. Evaluation of Ride-Sourcing Search Frictions and Driver Productivity: A Spatial Denoising Approach. Under review for publication in *Transportation Research Emerging Technologies*.

1. Zuniga-Garcia, N., H.W. Ross, and R.B. Machemehl. (2018). Multimodal Level of Service Methodologies: Evaluation of the Multimodal Performance of Arterial Corridors. Transportation Research Record, 2672(15), 142–154.

Skills

Languages English *(Full professional proficiency)* | Spanish *(Native proficiency)* | Portuguese *(Elementary proficiency)*
Programming Languages *Advanced proficiency*: R, *Intermediate*: Python | MATLAB, *Basic*: PostgreSQL | C++
Software Packages SPSS | SAS | MS Office | LaTeX | ArcGIS | AutoCAD

Extracurricular Activities

Mentor: **Graduates Linked with Undergraduates in Engineering (GLUE)** Women in Engineering Program (WEP) Spring 2019
President: **Women's Transportation Seminar (WTS)** UT-Austin Student Chapter 2017 - 2018
Seminar Series Director: **Graduate Engineering Council (GEC)** Cockrell School of Engineering UT-Austin 2017-2018