

Natalia Zuniga-Garcia

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Qualifications

- Interest in statistics, data science, and machine learning with a strong transportation engineering background.
- Experience in data modeling using R and Python with knowledge of big data statistical models.
- 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)* 2015 - Present
 - Performed 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
 - CE 367P Pavement Design and Performance (*Prof.: Dr. Jorge A. Prozzi*) Spring/Fall 2016
- **Interim Professor** *University of Costa Rica - Civil Engineering Department* II Semester 2014
 - IC 0810 Diseño Vial (*Geometric Design*) | Led weekly sessions for fourth-year Civil Engineering students.
- **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.

Notable Research Projects

- **Transit in the Context of New Transportation Paradigms (D-Stop)** Jan. 2019 - Present
 - Cleaning and mining of data from more than 2 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.
- **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.
- **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.
- **Work Zones Traffic Analysis for Freeway Maintenance Projects (TxDOT)** Jan. 2017 - Present
 - Use microsimulation software (TSIS-CORSIM) and ITS information to assess traffic impact of work-zones in Dallas, Texas.
- **Economic Analysis of Pavement Preservation Techniques (TxDOT)** Mar. 2016 - Aug. 2016
 - Implemented a stochastic life-cycle cost analysis of pavement preservation techniques, using a Monte Carlo simulation in MATLAB, with information from more than 14,000 construction projects in Texas highway network.
- **High-Definition Field Texture Measurements for Predicting Pavement Friction (USDOT)** Jan. 2016 - Dec. 2016
 - Developed Multiple Linear Regression models to predict highway friction using transportation infrastructure data.
 - Implemented signal processing techniques (such as linear filters) in Python's SciPy, to enhance pavement texture characterization.

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 | L^AT_EX | 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
Awards: **Women in Engineering Collaborative Leader, WTS Diane Woodend Jones Leadership Legacy** Scholarship 2018