# 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
  - 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
  - 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 asses 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 preservations 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 | 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
Awards: **Women in Engineering Collaborative Leader**, **WTS Diane Woodend Jones Leadership Legacy** Scholarship  2018