

Andres Castillo

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Education

University of Toronto

MASc in Civil Engineering - Transportation and Complex Systems

Toronto, Canada

Jan 2022 - Dec 2023

- **Thesis:** Predicting salaries in the Greater Toronto Area - A Bayesian approach
- **Supervisor:** Prof. Eric Miller

Universidad Nacional de Colombia

BSc. in Civil Engineering

Bogota, Colombia

Jun 2010 - Dec 2015

- Teaching Assistant for Traffic Engineering Course and Research Assistant at the Transportation Research Group

Work Experience

UofT Travel Modelling Group

Research Assistant

Toronto, Canada

Jan 2022 - Dec 2023

- Prepared several scenarios to investigate the effects of COVID-19 in the Toronto transportation system using the GTA Model and EMME.
- Developed a Bayesian hierarchical model for predicting salaries in the Greater Toronto Area. This model was designed as a component of the ILUTE framework, an Agent-Based simulation model for evaluating land use and transport interactions in urban areas.

Steer Group

Senior Consultant

Consultant

Assistant Consultant

Bogota, Colombia

Nov 2020 - Dec 2021

Jan 2018 - Oct 2020

Sep 2016 - Dec 2017

- Generated traffic and revenue forecasts for over ten 4G concession projects in Colombia, encompassing the roles of data analyst, transport modeller, and project manager.
- Automated and standardized the EMME modelling pipeline through Python scripts, reducing the time spent on model calibration and scenario analysis by 30% for the entire modelling team.
- Led the data and spatial analysis team to support economic reactivation during COVID-19 lockdowns in Bogota and Mexico City, producing several machine learning models (regression, classification, clustering) and interactive dashboards to visualize the results and support the decision-making process.
- Supported the development of multiple travel demand studies related to Highways and Railways projects in Latin and North America as a data analyst and transport modeller, using different tools such as Excel spreadsheet modelling, machine learning, statistical modelling, and data mining.

Projects and Leadership

Team leader of the MOVID19 Hackathon winning proposal

NUMO Alliance- DATASKETCH

Bogota, Colombia

Mar 2020

- 4-day competition to develop solutions aimed at improving the public transport quality in Bogotá during the COVID-19 Pandemic.
- Our team developed a web application to collect and visualize travel data to understand the travel needs of essential workers.

Team leader and web developer of a Research and Development (R&D) project

Steer Group

Bogota, Colombia

Nov 2018 - Dec 2021

- Led the development of a web application to collect, analyze, and visualize traffic data from Google Maps API using Django, PostgreSQL, D3.js, and Leaflet. All services are deployed in AWS.
- This application is currently used by different teams across the company and automatically manages the data collection process (Costs, Time Zones, Notifications, etc.).

Skills

Programming	Python (Pandas, NumPy, Scikit-learn, etc.). Familiar with PyTorch, JAX, Django, HTML/CSS, JavaScript, SQL.
Specialized Software	EMME-4, ArcGIS, QGIS, Illustrator.
Cloud Services	AWS, Google Cloud Platform.
Miscellaneous	PostgreSQL, Excel, Webscraping (Selenium), Git. Familiar with Latex, Linux, Docker.
Languages	English (Fluent), Spanish (Native).