Andres Castillo

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Education

University of Toronto   *Toronto, CA*
MASc in Civil Engineering - Transportation and Complex Systems   *Jan 2022 - Dec 2023*
- **Thesis:** Predicting salaries in the Greater Toronto Area - A Bayesian approach
- **Supervisor:** Prof. Eric Miller

Universidad Nacional de Colombia   *Bogota, Colombia*
BSc. in Civil Engineering   *Jun 2010 - Dec 2015*
- TA Traffic Engineering and Research Assistant Transportation Research Group

Work Experience

UofT Travel Modelling Group   *Bogota, Colombia*
Research Assistant   *Jan 2022 - Dec 2023*
- Prepare several scenarios to investigate the effects of COVID-19 in the Toronto transportation system using the GTA Model and EMME.
- Develop a Bayesian hierarchical model for predicting salaries in the Greater Toronto Area. This model belongs to the ILUTE framework which is an Agent-Based simulation model for evaluating the land use-transport interaction in urban areas.

Steer Group   *Bogota, Colombia*
Senior Consultant   *Nov 2020 - Dic 2021*
Consultant   *Jan 2018 - Oct 2020*
Assistant Consultant   *Sept 2016 - Dic 2017*
- Produce traffic and revenue forecast for more than ten projects within the 4G concession program in Colombia, working on different roles such as data analyst, transport modeller, and project manager.
- Automate and standardize the EMME modelling pipeline through Ptyhon scripts, reducing the time spent on model calibration and scenario analysis by 50% for all 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.
- Support the development of multiple travel demand analysis related to Highways and Railways projects in Latin and North America as a data analyst and transport modeller, using different tools such as spreadsheet modelling, machine learning, statistical modelling, and data mining.

Projects and Leadership

MOVID19 Hackathon winning proposal | Team leader   *Bogota, Colombia*
NUMO Alliance- DATASKETCH   *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.

R&D project team leader and web developer   *Bogota, Colombia*
Steer Group   *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 accross the company and automatically manages the data collection process (Costs, Time Zones, Notifications, etc.)

Skills

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