Juan Carlos Martínez Mori

jm2638@cornell.edu | jcmartinezmori.github.io | 657 Frank H.T. Rhodes Hall, 136 Hoy Rd, Ithaca NY 14853

EDUCATION

Cornell University Fall 2017 - Present
Center for Applied Mathematics
Ph.D. in Applied Mathematics
Committee: Samitha Samaranayake (chair), David Shmoys, Bobby Kleinberg
Areas: Combinatorial Optimization, Approximation Algorithms, Online Algorithms

University of Illinois at Urbana-Champaign Fall 2013 - Spring 2017
Bachelor of Science in Civil Engineering GPA: 3.91
Minor in Computer Science
Highest Honors at Graduation
Edmund J. James Scholar
Advisor: Prof. Daniel B. Work
Areas: Sustainable and Resilient Infrastructure Systems, Transportation Engineering

HONORS

Dwight David Eisenhower Transportation Fellowship (FHWA)	2017, 2018, 2020
Graduate Fellowship (Systems at Cornell)	Fall 2017
Melih T. Dural Undergraduate Research Prize (CEE at Illinois)	Spring 2017
Illinois Association of County Engineers Scholarship Award (CEE at Illinois)	Spring 2016
Summer Student Research Program Grant (ICT/IDOT)	Summer 2015
Grant W. Shaw Memorial Scholarship (CEE at Illinois)	Spring 2015
"Universidades de Excelencia" Full-Ride Scholarship (Govt. of Ecuador)	Fall 2013 - Spring 2017

INDUSTRY EXPERIENCE

Amazon.com

Research Scientist Intern, *Consumables Special Projects* Summer 2020
Manager: Elcin Cetinkaya, PhD
Designed and prototyped solution strategies for machine assignment problems arising in order fulfilment.

Bosch North America

Research Intern, *Bosch Energy Research Network* Summer 2017
Manager: Shyam Jade, PhD
Conducted city-scale traffic micro-simulations using MATSim to characterize powertrain requirements of future traffic with electric, autonomous vehicles.

RESEARCH

Papers

1. **Juan Carlos Martínez Mori** and Samitha Samaranayake, "On the Request-Trip-Vehicle Assignment Problem." *arXiv* preprint arXiv:2011.09952, 2020.
2. **Juan Carlos Martínez Mori** and Samitha Samaranayake, "Bounded Asymmetry in Road Networks." *Scientific Reports*, 9, 2019.
3. **Juan Carlos Martínez Mori** and Samitha Samaranayake, "The Batched Set Cover Problem." *arXiv* preprint arXiv:1811.10767, 2018.
4. William Barbour, **Juan Carlos Martínez Mori**, Shankara Kuppa, and Daniel Work, "Prediction of arrival times of freight traffic on US railroads using support vector regression." *Transportation Research Part C: Emerging Technologies*, 93, pp. 211-227, 2018.

5. Yanning Li, **Juan Carlos Martínez Mori**, and Daniel Work, "Estimating traffic conditions from smart work zone systems." *Journal of Intelligent Transportation Systems*, 22:6, pp. 490-502, 2018.
6. **Juan Carlos Martínez Mori**, William Barbour, Shankara Kuppa, and Daniel Work, "Predicting Delay Occurrence at Freight Rail Sidings." In *Proceedings of the 97th Transportation Research Board Annual Meeting*, 2018.
7. Yanning Li, **Juan Carlos Martínez Mori**, and Daniel Work, "Improving the effectiveness of smart work zone technologies." Tech. Report FHWA-ICT-16-021, *Illinois Center for Transportation*, 2016.

Academic Talks and Posters

Juan Carlos Martínez Mori, "On the Request-Trip-Vehicle Assignment Problem." Talk at the *UCLA Institute for Pure and Applied Mathematics*, Los Angeles, CA, October 13, 2020.

Juan Carlos Martínez Mori, "Algorithmic Challenges In Enabling High-capacity Ride Pooling Services." Talk at the *INFORMS Annual Meeting*, Seattle, WA, October 20-23, 2019.

Juan Carlos Martínez Mori, "Predicting Delay Occurrence at Freight Rail Sidings." Talk at the *97th Transportation Research Board Annual Meeting*, Washington, D.C., January 7-11, 2018.

Juan Carlos Martínez Mori, "Improving traffic estimation in smart work zone systems." Poster at the *65th Illinois Traffic Engineering and Safety Conference*, Champaign, IL, October 19-20, 2016.

RELEVANT COURSEWORK

Cornell University

CRP 6860: Sustainable Transportation
CS 6820: Analysis of Algorithms
CS 6815: Pseudorandonmness
MATH 6710: Probability Theory
MATH 6410: Enumerative Combinatorics
MATH 6230: Differential Games & Control
ORIE 6520: Applied Probability
ORIE 6334: Spectral Graph Theory
ORIE 6300: Mathematical Programming
ORIE 6180: Online Decision-Making

University of Illinois at Urbana-Champaign

CEE 498: Sustainable Infrastructure Systems
CEE 491: Decision and Risk Analysis
CEE 418: Public Transportation Systems
CEE 416: Traffic Capacity Analysis
CEE 310: Transportation Engineering
ECE 486: Control Systems
CS 498: Social and Information Networks
CS 482: Simulation
CS 412: Data Mining
CS 225: Data Structures

TEACHING

University of Illinois at Urbana-Champaign

Engineering Learning Assistant, ENG 100: *Engineering Orientation* Fall 2015, Fall 2016
This course introduces freshmen engineering students to the engineering profession, including the wide variety of studies and potential careers.

Laboratory Assistant, GE 101: *Engineering Graphics & Design* Fall 2014, Spring 2015
This course introduces students to computer-aided design using Autodesk Revit.

ACTIVITIES AND SKILLS

Review Contributions

Transportation Research Part C: Emerging Technologies, Transactions in GIS, TRB Annual Meeting (Transportation Network Modeling, AEP40)

Programming

Python (including pandas, networkx, osmnx, matplotlib, scipy, numpy, scikit-learn, etc.), Matlab, R, SQL

Specialized Tools

Gurobi, FICO Xpress, Git, LaTeX, TSS Aimsun, MATSim, AutoDesk Revit

Other

English, Spanish (native), Taekwondo (1st Dan Black Belt, Kukkiwon, No. 05431493)