Roger Lloret-Batlle (罗明杰)

Yinzhou District, Ningbo, Zhejiang, China
JinTianFu, Bldg 38, Unit 1, APT 2402
宁波市鄞州区堇天府38幢1单元2402号

rlloretb@mit.edu
+86 132 6195 7903
Spanish Nationality

Website: rogerlloret.com

EDUCATION

PhD, Civil Engineering: Transportation Systems Engineering. (GPA 3.93/4) Sep. 2012 - Sep. 2017
University of California, Irvine. Irvine, CA.
Thesis: Peer-to-peer Exchange and Collaborative Consumption of Supply in Transportation Systems.

MSc, Transportation Engineering. Sep. 2009 - Jun. 2011
Ecole Nationale des Ponts et Chaussées (ENPC), Champs-sûr-Marne, France.
Thesis: Modal Choice and Shipment Size Models based on the French ECHO Database

BSc and MSc, Civil Engineering. Sep. 2005 - Feb. 2012
Universitat Politècnica de Catalunya (UPC), Barcelona, Spain.

Certificate in International Management Sep. 2009 - Jun. 2010
International Business Specialization (mini-MBA)
ENPC School of International Management, Paris, France.

REFEREED PUBLICATIONS

- Lloret-Batlle, R., Zheng, J. (2023) "Jam Density and Stopbar Location Estimation with Trajectory Data at Signalized Intersections", *Transportation Research Part B: Methodological, 173, 162-175.*
- Wang, Z., Lloret-Batlle, R., Zheng, J., (2023) "Adaptive green split optimization for traffic control with low penetration rate trajectory data", *Journal of Intelligent Transportation Systems.*
- (Under review) Liu, M., Lloret-Batlle, R., Zheng, J., Liu, H. X., Li, S., Li, K."Optimizing Arterial Coordination Using Vehicle Trajectory Data", *Transportation Research Part A.*
- Lloret-Batlle, R., Wang, Z., Zheng, J. (2023) "Traffic Volume Estimation for both Undersaturated and Oversaturated Signalized Intersections with Stopbar Location Estimation Using Trajectory Data", *Transportation Research Record: The Journal of the Transportation Research Board.*, 2677(3), 343–354.
- Lloret-Batlle, R., Wang, Z., Liu, M., Zheng, J., Liu, H. X. (2020) "Efficient Network-wide Signal Coordination with Multiple Cycle Lengths and Trajectory Data", *Proc. TRB 20*20., Paper number: 20-03137.
- Malik, P., Jin, W., Lloret-Batlle, R., Jayakrishnan, R. (2019) "Numerical Simulations of a Unifiable Multi-Commodity Kinematic Wave Model for Traffic Systems with Tradable Right-of-Way", *WCTR 2019*, Paper number: 1271.
- Malik, P., Jin, W., Lloret-Batlle, R., Jayakrishnan, R. (2019) "A Unifiable Multi-Commodity Kinematic Wave Model for Traffic Systems with Tradable Right-of-Way", *Proc. TRB 201*9., Paper number: 19-05256.
- Lloret-Batlle, R. and Jayakrishnan, R. (2018) "Study of a dynamic cooperative trading queue routing control scheme for freeways and facilities with parallel queues", *Proc. TRB 2018.*, Paper number: 18-06538.
- Lloret-Batlle, R. and Jayakrishnan, R. (2017) "Envy-free Pricing for Collaborative Consumption in Transportation Systems". *The 22nd International Symposium on Transportation ISTTT22, July 24-26,2017.*

- Masoud, N., Lloret-Batlle, R. and Jayakrishnan, R. (2017) "Using Bilateral Trading to Increase Ridership and User Permanence in Ridesharing Systems". *Transportation Research Part E: Logistics and Transportation Review, 102, 60-77.*
- Lloret-Batlle, R., Masoud, N. and Nam, D. (2017) "P2P Ridesharing with Ride-back on HOV Lanes: Towards a Practical Alternative Mode for Daily Commuting". *Transportation Research Record*: *The Journal of the Transportation Research Board*, 2668, 21-28.
- Lloret-Batlle, R., Masoud, N. and Nam, D. (2017) "P2P Ridesharing with Ride-back on HOV Lanes: Towards a Practical Alternative Mode for Daily Commuting". *Proc. TRB 2017*, Paper number: 17-06253.
- Lloret-Batlle, R., and Jayakrishnan, R. (2016), "Envy-minimizing pareto efficient intersection control with brokered utility exchanges under user heterogeneity". *Transportation Research Part B: Methodological*, 94, 22-42.
- Masoud, N., Lloret-Batlle, R. (2016), "Increasing ridership and user permanence in ridesharing systems using a novel peer-to-peer exchange mechanism", *Proc. TRB 2016*, Paper number: 16-6425.
- Lloret-Batlle, R. and Combes, F. (2013) "Estimation of an inventory-theoretic model of mode choice in freight transport". *Transportation Research Record: The Journal of the Transportation Research Board*, 2378, 13-21. (2nd best paper at the European Transport Conference 2012, Glasgow, UK).

WORKING PAPERS

- Lloret-Batlle, R. "Market Design for Berth Allocation with Just-in-Time Arrivals and Transshipments"
- Wolff, P. and Lloret-Batlle, R. "Truck Loading with Flexible Decks"

PRESENTATIONS

- Lloret-Batlle, R., (2023) "Market Design for Berth Allocation with Just-in-Time Arrivals and Transshipments", *Eighth Marketplace Innovation Workshop 2023 (MIW2023)*, Microsoft Research.
- Wang, Z., Lloret-Batlle, R., Zheng, J., (2022) "Delay-based Adaptive Traffic Signal Control policies with arbitrarily low penetration rate trajectory data", *TRB 2022*.
- Lloret-Batlle, R., Wang, Z., Zheng, J., (2022) "Traffic Volume Estimation for both Undersaturated and Oversaturated Signalized Intersections with Stopbar Location Estimation Using Trajectory Data", *TRB 2022*.
- Lloret-Batlle, R., Wang, Z., Liu, M., Zheng, J., Liu, H. X. (2020) "Efficient Network-wide Signal Coordination with Multiple Cycle Lengths and Trajectory Data", *TRB 20*20.
- Lloret-Batlle, R., Masoud, N. (2018), "Computationally Efficient Truthful Mechanisms for Large-scale P2P Ridesharing Systems", *INFORMS Annual Meeting 2018, Phoenix, AZ.*
- Lloret-Batlle, R. and Jayakrishnan, R. (2017), "Core-stable Queue Routing Policies for Multiserver Queue Facilities and Highway Control", *INFORMS Annual Meeting 2017, Houston, TX.*
- Lloret-Batlle, R. and Jayakrishnan, R. (2016), "Envy-free pricing in transportation systems", *INFORMS Annual Meeting 2016, Nashville, TN.*
- Lloret-Batlle, R. and Jayakrishnan, R. (2015), "Envy-free pricing in signalized traffic control with value of time heterogeneity", *INFORMS Annual Meeting 2015, Philadelphia, PA*.
- Lloret-Batlle, R. and Jayakrishnan, R. (2014), "Online Auction Designs for Traffic Intersection Operations", *INFORMS Annual Meeting 2014, San Francisco, CA*.
- Lloret-Batlle, R. and Combes, F. (2013), "Estimation of an inventory-theoretic model of mode choice in freight transport", *Proceedings of the 92th Annual Meeting Transportation Research Board, Washington DC*.

INVITED TALKS

- "Adaptive Traffic Signal Control with TNC Sparse trajectory data", COTA-CICTP 2021, December 18th, 2021.
- "Towards Collaborative Consumption of Supply in Urban Systems", MIT, CEE, February 27, 2017.

PATENTS

- Lloret-Batlle, R.,Wang, Z., Liu, M., Zheng, J., Liu, X. H., "Efficient Network-Wide Signal Coordination with Multiple Cycle Lengths and Trajectory Data". WO/2021/142642

RESEARCH AND PROFESSIONAL EXPERIENCE

NISCI (MIT-SCALE), Assistant Professor, Ningbo, China May 2022 - Present
Projects:

- Main research line: Market design mechanisms for Just-In-Time arrivals at container terminals.
- ETA prediction for trans-Pacific routes. Project sponsored by: JUSDA International Supply Chain Management Co., Ltd.
- Truck loading with flexible decks. Project sponsored by China International Marine Containers Co., Ltd (CIMC)

Didi-Chuxing, Research Scientist, Beijing, China July 2018 - Present
Adaptive traffic signal control systems with sparse trajectory data

- Adaptive Signal Control Strategies with sparse trajectory data.
- Bandwidth maximization traffic signal control schemes for large-scale traffic networks.
- Percolation-based studies for network resilience.
- Traffic state estimation with sparse trajectory data.
- Signal plan estimation with sparse trajectory data.
- International Project Management (expansion of business unit in Brazil, Mexico and Russia)

Univerisity of Michigan, Postdoctoral scholar. September 2017 - June 2018
Design and operation of efficient and budget-balanced shared-use mobility systems.
Proposal written with Prof. Neda Masoud, Civil and Environmental Engineering. Research funded by Center for Connected and Automated Transportation (CCAT). Amount awarded: $108,049

- Designing approximate mechanism design solutions for dynamic ridesharing systems: large-scale MILP problem decomposition and usage of large datasets.

UCIrvine, Research assistant. October 2016 - August 2017
Cooperative game-theoretical solution concepts for queue routing and freeway operations.
Research Project funded by the Civil and Environmental Engineering Department.

Technion - Israel Insititute of Technology, Summer Visiting Researcher September 2016
Stability in two-sided market matching problem with complements.
Visiting Prof. Ron Lavi, Industrial Engineering and Management department.

- Ascending primal-dual envy-free combinatorial auctions for ride-sharing problems.

New York University, Summer Visiting Researcher June 2016 - August 2016
Stable matching of service tours to design cooperative policies for transport infrastructure systems.
Supported by NSF CMMI-CIS.
Visiting Prof. Joseph Chow, Civil and Urban Engineering Department.
CitySMART Laboratory. Tandon School of Engineering.

- Development of a stable and fair pricing mechanism for the two-sided (matching) Pick-up Delivery Problem.

UCIrvine, Research assistant. March 2015 - December 2016
Promoting Peer-to-Peer Ridesharing Services as Transit Systems Feeders.
Research Project funded by UCConnect.

- Design of a distributed large-scale truthful efficient pricing mechanism to be implemented for a ridesharing program for Los Angeles County using OD data.

  - Its implementation is under consideration at Scoop Technologies, Inc; a ridesharing company located in San Francisco.
- Design of a real-time pricing scheme to increase ridership and user permanence in P2P Ridesharing.
  - It received attention from RideFlag, a Canadian carpooling startup company. They will implement the idea once they reach customer critical mass.

UCIrvine, Research assistant. September 2014 – August 2015
Case studies of supply-use exchanges: Traffic control and Ride-sharing.
Balsells Foundation support.
- Design of traffic signal control algorithm with P2P exchanges in a connected vehicle environment (V2I)

UCIrvine, Research assistant. September 2012 – August 2014
New paradigms for Supply-demand framework Under peer-to-peer exchanges in transportation.
Balsells Foundation support.
- Developing new versions of Florian-Gaudry supply-demand frameworks.
- Studying application cases for P2P utility exchanges. Application to traffic signal control.

Universitat Politècnica de Catalunya, Research intern. February – August 2012
STRAIGHTSOL and MEDUSA Projects: Freight Transport Demand Modeling and Logistics
CENIT (Center for the Innovation in Transport) Barcelona - UPC.
- Generation and Distribution models for Urban Consolidation Centers (UCCs) UCC socioeconomic evaluation.

Ecole Nationale des Ponts et Chaussées, Research intern. March – August 2011
Research Internship in Freight Transport Demand Modeling (MSc Thesis)
LVMT: ENPC Transportation Laboratory.
- Resulted in a refereed journal publication (TRR): "Estimation of Inventory-Theoretic Model of Mode Choice in Freight Transport" and 2nd best paper price at the ETC 2012 Presentation.

Rencon d.o.o, Draughtsman July – September 2009
Road reconstruction - Surveying, Draughtsman (IAESTE Internship Program) Rencon d.o.o 8, Vijenac Ivana Mažuranića St, 31000 Osijek, Croatia.

AREMA, Draughtsman June – September 2007/2008
Draughtsman for Waste Water Treatment Plants projects. Surveying, Draughtsman, Budgeting, Accounting.
AREMA: 479, Carrer Muntaner, 08021 Barcelona.

TEACHING EXPERIENCE

NISCI (MIT-SCALE) and University of Nottingham Ningbo, Assistant Professor. Spring 2023
BUSI4612: International Symposium on Supply Chain Management (MSc Supply Chain Management)
- Coordinating students for the 3-week MIT SCALE event in Cambridge, MA.
- Group coursework and examination design. Grading.

NISCI (MIT-SCALE), Assistant Professor. Fall 2022
AMSCM1, AMSCM2: Analytical Methods for Supply Chain Management (Executive MBA with Ningbo University)
- Syllabus: Probability, statistics and optimization methods for Supply Chain Management.
- Lectures, recitations, grading, assignments and examination design.

UCIrvine, Teaching Assistant. Spring 2016, Spring 2017
CEE81A: Civil Engineering Practicum I Instructor: Prof. R. Jayakrishnan

- Taught computer lab sessions: AutoCAD and Sketchup. Set up problems in examinations. Graded homeworks, projects and examinations.
- Complemented my lab lectures with video tutorials on Youtube.

UCIrvine, Co-Instructor. Fall 2015
CEE 220A: Travel Demand Analysis Instructor: Prof. Will Recker
- Prepared and taught four lectures as an introduction to microeconomics for transportation engineers.
- Set up homework and examination problems.

UCIrvine, Co-organizer. Fall 2014, Winter 2015, Spring 2015.
CEE295: Transportation Engineering Seminar. Instructor: Prof. Wenlong Jin
- Searched for presenters, managed the seminar schedule and prepared announcements and communications.

AWARDS

- $2,500: ITS California Scholarship 2016 for Graduate Studies in Intelligent Transportation Systems.
- $18,000: UCConnect Dissertation Grant 2015.
- 3×$50,000: Balsells Graduate Fellowship 2012-13, 2013-14, 2014-15.
- 2nd Best podium presentation at UCConnect Student Conference 2016, UC Riverside.
- 2nd Best paper at the European Transport Conference 2012, Glasgow, UK.
- Marcel Bru i Turull 2010 Award for best Environmental Article in UPC-ETSECCPB.

LEADERSHIP ACTIVITIES

UCIrvine Finalist team "Waytrade" in Butterworth and Beall Entrepreneurship competitions. November 2014 – June 2015
- Created and led a team of five students to:
  - Design a business plan, build a physical demonstration and develop a mobile application for my Priced EXchanges in Intersection Control system (PEXIC), corresponding to Lloret-Batlle and Jayakrishnan (2016).

UCIrvine International Committee Chair June 2013 – August 2014
UCIrvine's Graduate Student Government (UCI AGS-ISC).
- Event planning and execution of:
  - Two welcoming ceremonies (500 attendees each), two professional workshops (70 attendees each),
  - Intercultural concert "One World Concert" (400 attendees) and a soccer tournament (100 players).
- Advocacy for international students.
- Representing the Graduate Student Government at UCIrvine's Academic Senate: Subcommittee on International Education.
  - Writing of UCIrvine's Exchange Program International Education Vision Statement.
- Cultural consultancy to student services providers: International Center, Graduate Division and Graduate Resource Center.

UCIrvine Graduate Division Peer mentor June – September 2013 and 2014
- Mentoring and welcoming incoming international students.

Universitat Politècnica de Catalunya, UPC Debating Team member. September 2011 – June 2012
- 3rd position in the 2nd "Economics and Business" debating league of University of Barcelona Business School.

Universitat Politècnica de Catalunya, IAESTE Barcelona's Civil Engineering Secretary September 2007 – June 2009

- Internship management and scheduling.
- Promotion and communication activities on technical students' international professional exchange.

PROFESSIONAL SERVICE

EURO Journal on Transportation and Logistics, Reviewer 2018 – present
Transportation Research Part B, C, E, Reviewer 2017 – present
Transportation Science, Reviewer 2018 – present
Transportation Research Record, Reviewer 2015 – present
ISTTT, Reviewer 2023 – present

INFORMS, Transportation Systems and Logistics member. 2014 – present
Session Chair for topics in economics and networks.

Transportation Research Board, Member. 2013 – present
Committees: Friend of Network Modelling, Freight Transportation Planning and Logistics, Traffic Signal Control, Artificial Intelligence, Transportation Economics.

SKILLS AND INTERESTS

- Languages: English (fluent), French (Fluent), Mandarin Chinese (HSK3), Spanish (Native) and Catalan (Native).
- Programming languages and software: Python, C++, Shell, R, SQL, MATLAB, Gurobi, CPLEX, PyTorch, SUMO, Paramics, TransCAD.
- Extracurricular activities: alpinism, table tennis, weightlifting.

REFEREES

Prof. R. Jayakrishnan
Department of Civil and
Environmental Engineering
Institute of Transportation
Studies AIRB Building 4th floor
University of California, Irvine
Irvine, CA 92697-3600, USA
rjayakri@uci.edu

Prof. Wilfred Recker
Department of Civil and
Environmental Engineering
Institute of Transportation
Studies AIRB Building 4th floor
University of California, Irvine
Irvine, CA 92697-3600, USA
wwrecker@uci.edu

Prof. Amelia Regan
Director, Supply Chain
Transportation and Logistics
Graduate Degree Program
Wilson Ceramic Lab 202D
University of Washington
Seattle, WA 98195, USA
aregan8@uw.edu

Prof. Joseph Y.J. Chow
Department of Civil and
Urban Engineering
New York University
6 Metro Tech Center, RH400B
Tandon School of Engineering
Brooklyn, NY 11201, USA
joseph.chow@nyu.edu

Prof. Neda Masoud
Department of Civil and
Environmental Engineering
University of Michigan
2350 Hayward, 2124 GG Brown
Ann Arbor, Michigan 48109-2125,
USA
nmasoud@umich.edu