

Kyung (Kate) Hyun, Ph.D.

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ACADEMIC APPOINTMENTS

University of Texas at Arlington

Assistant Professor, Department of Civil Engineering

Aug 2017 – Present

University of California, Irvine

Assistant Project Scientist, Institute of Transportation Studies

Jan 2017 – Jun 2017

EDUCATION

Ph.D. in Civil and Environmental Engineering

Dec 2016

Institute of Transportation Studies, University of California Irvine, Irvine, CA

Dissertation: Network-wide truck tracking using advanced point detector data, Advisor: Stephen G. Ritchie

M.S. in Urban Planning and Engineering (Transportation)

June 2010

Yonsei University, Seoul, South Korea

B.S. in Urban Planning and Engineering

June 2008

Yonsei University, Seoul, South Korea

PUBLICATIONS

Journal Papers

- Hernandez, S., and **Hyun K.**, (2019) Fusion of Weigh-in-Motion and Global Positioning System Data to Estimate Truck Weight Distributions at Traffic Count Sites, *Journal of Intelligent Transportation Systems, Taylor and Francis*, pp. 1-15
- **Hyun, K.**, Jeong, K., and Ritchie, S.G., (2018), Assessing crash risks considering vehicle interactions with trucks using point detector data, *Journal of Accident Analysis and Prevention, Elsevier, 130*, pp. 75-83
- **Hyun, K.**, Tok, A., and Ritchie, S.G., e (2017), Long Distance Truck Tracking from Advanced Point Detectors using a Selective Weighted Bayesian Model, *Journal of Transportation Research Part C, Elsevier, Vol. 82*, pp 24-42
- **Hyun, K.**, and Ritchie, S.G., (2017), A sensor location decision model for truck flow measurement, *Journal of the Transportation Research Board, TRB, (2644)*, pp.1-10
- Tok, A., **Hyun, K.**, Hernandez, S., Jeong, K., Sun Y., Rindt, C., and Ritchie, S.G., (2017), Truck activity monitoring system (TAMS) for freight transportation analysis, *Transportation Research Record, 2610(1)*, pp.97-107.
- Nam, D., **Hyun, K.**, Kim, H., Ahn, K., Jayakrishnan, R., (2016), Grid Cell Based Taxi Ridership Analysis Using Large Scale GPS Data, Model, *Journal of the Transportation Research Board, TRB, No. 2544*, pp. 131-140
- **Hyun, K.**, Hernandez, S., Tok, A., and Ritchie, S.G., (2015), Truck body configuration volume and weight distribution: Estimation by using Weigh-in-Motion data, *Journal of Transportation Research Board, TRB Issue 2478*, pp.103-112

- Lee, J., Jo, H., **Hyun, K.**, and Jung, J., (2009) The effect analysis of one-side walking behavior using MDPM (Multi-directional Pedestrian Model), *Journal of the Korea Institute of Intelligent Transport Systems*, Vol.8, No.5, pp 151-159.

Under Review

- Philips, A., Naz, F., **Hyun, K.**, Patel, V., Zhang, G., Kim, W., (2019), Social Media Text Analysis using Multi-kernel Convolution Neural Network for Ride Hailing Service Assessment, *Journal of the Transportation Research Board, TRB*
- Fields, N., Miller, V., Cronley, C., **Hyun, K.**, Mattingly, S., Khademi, S., Nargesi, S., Williams, J., (2019) Examining the Feasibility of Shared Mobility Programs for Reducing Transportation Inequities: Perspectives from the Front-line, *Journal of the Transportation Research Board, TRB*
- Boni, J., Rahman, Z., Mattingly, S., **Hyun, K.** (2019), Detailed synthesis on the impact of smart device induced distraction on driver, saturation flow, and startup loss time, *Journal of the Transportation Research Board, TRB*
- Robinson, S. Cronley, C., **Hyun, K.**, Naz, F., Interprofessional Collaboration to Promote Transportation Equity for Environmental Justice Populations: A Mixed Methods Study of Civil Engineers, Transportation Planners, and Social Workers' Perspectives, *Journal of the Transportation Research Board, TRB*
- **Hyun, K.**, Naz, F., Cronley, C., Robinson, S. (2019), Is Shared Mobility a Viable Transportation Option for Everyone? Lessons learned from Mixed Method Analysis, *Journal of the Transportation Research Board, TRB*
- Miah, M., Naz, F., **Hyun, K.**, Mattingly, S., Cronley, C., Fields, N (2019) Barriers and Opportunities for Paratransit Users to Adopt On-Demand Micro Transit, *Journal of the Transportation Research Board, TRB*
- Famili, S., **Hyun, K.** (2019) The Effect of Transport Choice and Trip Features on Perceived Health, *Journal of the Transportation Research Board, TRB*
- Rad, S., Arabi, M., **Hyun, K.**, Mattingly, S (2019) Role of Transportation and Urban Design to the Health Impacts: A case study of Dallas-Fort Worth, Texas, *Journal of the Transportation Research Board, TRB*

Conference Proceedings

- **Hyun, K.**, Mitra, S., Jeong, K., and Tok, A. (2019), Determinants of crash type and severity using Generalized Structure Equation Modelling, *Journal of the Transportation Research Board, TRB*
- Jeong, K., **Hyun, K.**, and Ritchie, S.G., (2017), Influence of personal concerns about travel on travel behavior, *Proceedings of the Annual Meeting of the Transportation Research Board, Washington, D.C.*
- **Hyun, K.**, and Ritchie, S.G., (2017), A sensor location decision model for truck flow measurement, *Proceedings of the Annual Meeting of the Transportation Research Board, Washington, D.C.*
- **Hyun, K.**, Jeong, K., and Ritchie, S.G., (2017), Assessing crash risks considering vehicle interactions with trucks using point detector data, *Proceedings of the Annual Meeting of the Transportation Research Board, Washington, D.C.*
- Hernandez, S., and **Hyun, K.**, (2017), Truck weight distributions at traffic count sites using WIM and GPS data, *Proceedings of the Annual Meeting of the Transportation Research Board, Washington, D.C.*
- Tok, A., **Hyun, K.**, Hernandez, S., Jeong, K., Sun, Y., Rindt, C., and Ritchie, S.G., (2017), Truck activity monitoring system (TAMS) for freight transportation analysis, *Proceedings of the Annual Meeting of the Transportation Research Board, Washington, D.C.*
- **Hyun, K.**, Tok, A., and Ritchie, S.G., (2016), Long Distance Truck Tracking from Advanced Point Detectors using a Selective Weighted Bayesian Model *Proceedings of the Annual Meeting of the Transportation Research Board, Washington, D.C.*
- Nam, D., **Hyun, K.**, Kim, H., Ahn, K., Jayakrishnan, R., (2016), Grid Cell Based Taxi Ridership Analysis Using Large Scale GPS Data, *Proceedings of the Annual Meeting of the Transportation Research Board, Washington, D.C.*

- **Hyun, K.**, Hernandez, S., Tok, A., and Ritchie, S.G., (2014), Estimating Truck Volumes by Body Configuration using Weigh-in-Motion Data, *Proceedings of the Annual Meeting of the Transportation Research Board, Washington, D.C.*

Technical Reports

- **Hyun, K.**, Cronley, C. (2019). Assessing Viability of Carsharing for Low-Income Communities
- Fields, N., Cronley, C., **Hyun, K.**, Mattingly (2019) How Can Interdisciplinary Teams Leverage Emerging Technologies to Respond to Transportation Infrastructure Needs? A Mixed-Methods Evaluation of Civil Engineers, Urban Planners, and Social Workers' Perspectives, Transportation Research and Education Center (TREC), NITC-RR 1176, Final Report 4-2019
- **Hyun, K.**, Cronley, C (2019) Assessing Viability of Carsharing for Low-Income Communities, US DOT/Center for Transportation Equity, Decisions & Dollars
- Cronley, C., Fields, N., **Hyun, K.**, Mattingly, S., It's an Economic Issue: Expanding Access to Opportunities across the Cities of Arlington and Grand Prairie, TX Through Mass Transit (2019), University of Texas at Arlington

CONFERENCE PRESENTATIONS AND INVITED TALKS

Conference Presentation

- Fields, N., Cronley, C., **Hyun, K.** (2019) Voices from the Field: Strategies to Increase Interdisciplinary Collaboration and Education, Transportation & Communities Summit 2019, September 2019
- Naz, F., **Hyun, K.**, (2019) A comparative analysis of paratransit and ridesharing service rider's characteristics and their travel pattern, Transportation & Communities Summit 2019, September 2019
- **Hyun, K.**, Mattingly, S., Cronley, C., Fields, N., Naz, F., Miah, M, Narah, S., (2019) Characterizing the users and trip patterns of a door-to-door shared paratransit service where fixed route public transit service does not exist, Sixth Annual Summer Conference on Livable Communities, June 2019
- Famili, S., Rad, S., **Hyun, K.** (2019) Monitoring Daily Activities and Linking Physical Activity Levels Attributed to Transportation Mobility Choices, ITE meeting, Texas, July 2019
- Naz, F., **Hyun, K.** (2019) Accessing viability of carsharing for low-income communities, Poster session Presented at 2019 TxITE District Meeting, San Antonio, Texas, April 2019
- Famili, S., **Hyun, K.**, (2018) Effect of transport choice on perceived health: A case study of metropolitan areas in Texas and California, TexITE meeting Dallas Chapter, Sep 2018
- Boni, J. A., Rahman, Z., **Hyun, K.**, Mattingly, S. P. (2018). A Qualitative Surrogate Safety Measure to Assess Pedestrian and Bicyclist Safety at both Segments and Intersections. Poster session Presented at 2018 Joint Western & Texas District Meeting, Keystone, Colorado.2
- Naz, F., **Hyun, K.** (2018) Carsharing accessibility for low income community, Poster session Presented at 2018 Joint Western & Texas District Meeting, Keystone, Colorado.
- Famili, S., **Hyun, K.**, Mattingly, S. P. (2018). Perceived and objective health measures and mode choice, Poster session Presented at 2018 Joint Western & Texas District Meeting, Keystone, Colorado.
- **Hyun, K.**, (2018) Estimating truck loads at traffic count sites using data fusion of WIM and GPS", *UKC 2018, New York City, NY*
- **Hyun, K.**, and Ritchie, S.G., (2017), "A sensor location decision model for truck flow measurement", *96th Annual Meeting of the Transportation Research Board, Washington, D.C.*
- **Hyun, K.**, Jeong, K., and Ritchie, S.G., "Assessing crash risks considering vehicle interactions with trucks using point detector data", *96th Annual Meeting of the Transportation Research Board, Washington, D.C. & 2018 RS5C Road safety conference, South Korea*

- Tok, A., **Hyun, K.**, Hernandez, S., Jeong, K., Sun, Y., Rindt, C., and Ritchie, S.G., “Truck activity monitoring system (TAMS) for freight transportation analysis”, *96th Annual Meeting of the Transportation Research Board, Washington, D.C.*
- Hernandez, S., and **Hyun, K.**, “Truck weight distributions at traffic count sites using WIM and GPS data”, *96th Annual Meeting of the Transportation Research Board, Washington, D.C.*
- Jeong, K., **Hyun, K.**, “Influence of personal concerns about travel on travel behavior”, *96th Annual Meeting of the Transportation Research Board, Washington, D.C.*
- **Hyun, K.**, and Ritchie, S.G., “Long Distance Truck Tracking from Advanced Point Detectors using a Selective Weighted Bayesian Model”, *95th Annual Meeting of the Transportation Research Board, Washington, D.C., and University of California Transportation Center Student (UCTC) Conference, UC Riverside*
- **Hyun, K.**, Hernandez, S., Tok, A., and Ritchie, S.G., “Estimating Truck Volumes by Body Configuration using Weigh-in-Motion Data”, *2014 UCTC Student Conference, Cal Poly Pomona (Best Overall Poster Award) and 94th Annual Meeting of the Transportation Research Board, Washington, D.C.*

Invited Talks

- “Application of Big data from ITS technologies for commercial vehicle activity monitoring”, ASCE meeting, Dallas, TX, August 2018
- “Freight mobility and safety”, 2018 Hanyang University, South Korea, May 2018
- “Vehicle tracking and classification”, 2018 Seminar Series, KSCEE, April 2018
- “Commercial vehicle activity monitoring using Intelligent Transportation Systems Technologies”, 2017 Fort Worth ITE December Meeting, Dec 2017

ACADEMIC EXPERIENCE

- **Assistant Professor** Aug 2017- Present
Department of Civil Engineering, University of Texas at Arlington
 - **Hyun, K.**, (PI), Mattingly, S., The Impact of Increased Adverse Weather Events on Freight Movement, USDOT/Transportation Consortium of South-Central States, Aug 2019 – Feb 2021, \$ 110,000
 - **Hyun, K.**, (PI), Lee, K., Krejci, C., Developing strategies to enhance mobility and accessibility for community-dwelling older adults, USDOT/ National Institute for Transportation and Communities, Sep 2019 – August 2020, \$ 248,625
 - Mattingly, S., **Hyun, K.**, (Co-PI), Taylor Li, Analyze the Use of Green Pavement Markings - Intersection Safety for Non-Motorized Users, TxDOT, Jan 2020 – Dec 2021, \$ 299,693
 - Mattingly, S., **Hyun, K.**, (Co-PI) Assessing the Value of Next-Generation Scenario Planning for Emerging Transportation Technologies, TxDOT, Sep 2019 – August 2021, \$298,493
 - Sattler, M., **Hyun, K.**, (Co-PI), Food Waste to Fleet Fuel: Development of the F4 Framework, US DOT/Center for Transportation Equity, Decisions & Dollars, June 2019 – May 2020, \$ 118,714
 - **Hyun, K.**, (PI), Mattingly, S., Williams, J., Evaluating Lost Capacity Due to Technology Related Behavior, North Central Texas Council of Government, Oct 2018 – Sep 2019, \$50,000
 - **Hyun, K.**, (PI), Mattingly, S., Exploring data fusion techniques to derive bicycle volumes on a network, Sponsor: USDOT/ National Institute for Transportation and Communities Jan 2019 – July 2021, \$80,000
 - Crutchfield, J., **Hyun, K.**, (co-PI), Cronley, C, Helping environmental justice populations maintain access to opportunities in a booktown: An interdisciplinary, mixed-methods approach to addressing infrastructure needs, Sponsor: USDOT/ National Institute for Transportation and Communities, Jan 2019 – July 2021, \$20,000

- Kim, W, **Hyun, K** (co-PI), Zhang, G., Social media analysis for transit assessment, Sponsor: USDOT/ Center for Transportation Equity, Decisions & Dollars, Sep 2018- Aug 2019, \$ 101,930
 - **Hyun, K**, (PI), Mattingly, S , Cronley, C, and Fields, N., Characterizing Handitran and Via Users: A Comparative Analysis of the Riders and Their Travel Patterns, Sponsor: City of Arlington, Aug 2018 – July 2019, \$20,000
 - Sharareh Kermanshachi, and **Hyun, K**, (co-PI), Path to developing influential Hispanic leaders: Unprecedented workshop sessions to attract Hispanic girls to executive positions in Civil Engineering, Sponsor: Engineering Information Foundation, Sep 2018 – Aug 2019, \$37,498
 - **Hyun, K**, (PI), and Cronley, C., Assessing viability of carsharing for low-income communities, Sponsor: USDOT/ Center for Transportation Equity, Decisions & Dollars, Feb 2018-Jan 2019, \$45,000
 - Mattingly, S., **Hyun, K** (co-PI), Williams, J., Cronley, C, and Fields, N., NITC National Partner Budget - UTC National Project 2018 – Scholars, SDOT/ National Institute for Transportation & Communities, \$90,000
 - Mattingly, S., **Hyun, K** (co-PI), Williams, J., Cronley, C, and Fields, N., NITC National Partner Budget - UTC National Project 2018 - Student Groups, USDOT/ National Institute for Transportation & Communities, \$60,000
 - Mattingly, S., **Hyun, K**, (co-PI) and Fang, N., Assessing the Impact of Air Pollution on Public Health Along Transit Routes, Sponsor: USDOT/Transportation Research Center for Livable Communities, Sep. 2017-Aug 2018, \$103,200
 - Oh, J., Lee, S., Al-Fuqaha, A., Mattingly, S., and **Hyun, K**, (co-PI)., Monitoring Daily Activities and Linking Physical Activity Levels Attributed to Transportation Mobility Choices and Built Environment, Sponsor: USDOT/Transportation Research Center for Livable Communities, Sep. 2017-Aug 2018, \$200,000 (UTA portion: \$100,000)
 - Fields, N., **Hyun, K**, (co-PI), Mattingly, S., and Cronley, C., How can interdisciplinary teams leverage emerging technologies to respond to transportation infrastructure needs? A mixed-methods evaluation of civil engineers, urban planning, and social workers' perspectives., Sponsor: USDOT/ National Institute for Transportation and Communities, Jan. 2018-Dec 2018, \$20,000
- **Assistant Project Scientist** Jan 2017- June 2017
Institute of Transportation Studies, University of California, Irvine
 - A network-wide truck tracking study with an application of truck weight estimation, PI: S.G. Ritchie, Sponsor: California Department of Transportation (Caltrans)
 - Truck Count Study, PI: S.G. Ritchie, Sponsor: California Department of Transportation (Caltrans)
 - **Graduate Student Researcher** Sep 2011 – Dec 2016
Civil and Environmental Engineering Department, University of California, Irvine
 - Truck Count Study, PI: S.G. Ritchie, Sponsor: California Department of Transportation (Caltrans)
 - Development of a New Methodology to Characterize Truck Body Types along California Freeways, PI: S.G. Ritchie, Sponsor: California Air Resources Board
 - California Statewide Freight Forecasting Model Development, PI: S.G. Ritchie, Sponsor: California Department of Transportation (Caltrans)

TEACHING EXPERIENCE

- **Assistant Professor**
Department of Civil Engineering, University of Texas at Arlington
 - CE 4311/5337: Urban Transportation Planning Fall 2017/2018/2019
 - CE 3301: Stochastic Modeling Spring 2018/2019

- **Graduate Teaching Assistant**

- **Civil and Environmental Engineering Department, University of California, Irvine**

- CEE 121: Highway Design and Analysis, UC Irvine Fall 2015 & Fall 2016
 - CEE 295: Student Seminar, UC Irvine Fall 2012
 - Graduate and Undergraduate Student Research Mentor, UC Irvine 2013-2016

HONORS

- Best poster award, UKC student research presentation 2016
- Best presentation award, KSEA-SWRC student research presentation 2016
- Graduate Scholarship, KSEA-KUSCO 2016
- First Place Overall Excellence in poster presentation, University of California Transportation Center (UCTC) Student Conference 2014
- Graduate Scholarship, Women's Transportation Seminar (WTS) 2013
- Best Paper Award, Journal of Korean Society of Transportation, South Korea 2008&2009
- Graduate and Undergraduate Scholarship, Yonsei University, Seoul, South Korea 2005-2010

PROFESSIONAL TRAINING

- Social Determinants of Health Innovation Workshop by Urban Serving University (USU), University of Cincinnati 2019
- NSF CAREER Workshop, Washington DC 2019
- TA Professional Development Training (TAPDP) Workshop, UC Irvine 2015
- Women's Transportation Seminar (WTS) Academy 2015

MEDIA

- National Institute for Transportation and Communities, Developing tools for Social Workers, Engineers, and Planners to Address Mobility Gaps Collaboratively, April 2019, <https://nitc.trec.pdx.edu/news/developing-tools-social-workers-engineers-and-planners-address-mobility-gaps>
- EurekAlert, Fuse data methods to determine more accurate numbers, March 2019 https://www.eurekalert.org/pub_releases/2019-03/uota-uce030819.php
- The shorthorn, Arlington, UTA set to collaborate on transportation, October 2018, http://www.theshorthorn.com/news/arlington-uta-set-to-collaborate-on-transportation-sustainability-research/article_32cea12a-ccf9-11e8-b185-371e6f09bf0f.html

PROFESSIONAL SERVICE AND AFFILIATIONS

- Member, Transportation Research Board (TRB), Trucking Industry Research Committee (AT 060) 2018 – Present
- Member, Transportation Research Board (TRB), Freight Transportation Planning and Logistics (AT015) 2019-Present

- Serve as a reviewer: Transportation Research Board(TRB) 2015-Present
- Serve as a reviewer: Journal of Intelligent Transportation Systems, Journal of Urban Planning and Development 2018 - Present
- Serve as an Auditor, Korean Transportation Association in America (KOTAA) 2019- Present
- Serve as a Secretary of General Affair, Korean Transportation Association in America (KOTAA) 2013-2016
- Co-inventor of Patent ‘Korean Domestic Patent on system for estimating public transportation system’, G06Q 30/0201, No. 1020090044347
- License: Engineer Transportation, Korea