

Department of Civil & Environmental Engineering
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Research Interests: Multimodal transportation networks, long-distance transportation systems, air transportation & airport operations, resource allocation / optimization

Education

Doctor of Philosophy, Civil and Environmental Engineering University of California, Berkeley Thesis: <i>Collaborative Resource Allocation Strategies for Air Traffic Flow Management</i> http://escholarship.org/uc/item/4f07r35r Minors in stochastic processes (operations research & statistics), econometrics	2006–2011
Master of Science, Civil and Environmental Engineering University of California, Berkeley	2001–2002
Bachelor of Applied Science, Civil Engineering University of Waterloo; <i>Junior year abroad at Leeds University, UK</i>	1996–2001

Employment

Associate Professor , <i>Dept. of Civil & Environmental Engineering</i> , University of Alberta	7/2017–present
Assistant Professor , <i>Dept. of Civil & Environmental Engineering</i> , University of Alberta (<i>Maternity leave December 2013 – June 2014</i>)	2011–2017
Post-Doctoral Researcher , <i>National Center of Excellence for Aviation Operations Research</i> , UC Berkeley	2011
Graduate Student Researcher , <i>National Center of Excellence for Aviation Operations Research</i> , UC Berkeley	2007–2011
Graduate Student Researcher , <i>Partners for Advanced Transit and Highways</i> , UC Berkeley	2006–2007
Traffic Engineering Analyst , <i>Delcan Corporation</i> , Vancouver, BC	2005–2006
Associate Transportation Engineer/Planner , <i>Dowling Associates, Inc.</i> , Oakland, CA	2002–2005
Graduate Student Researcher , <i>Institute of Transportation Studies</i> , UC Berkeley	2001–2002
Undergraduate Research Assistant , <i>Dept. of Civil Engineering</i> , University of Waterloo	1998–2001
Co-operative Work Terms (<i>Municipality of Hamilton-Wentworth, Ministry of Transportation Ontario, MMM Group, Giffels Associates, Urban Systems Ltd.</i>)	1997–2000

Publications (names of graduate students & PDFs underlined)

[Google Scholar](#) [ORCID](#) [ResearchGate](#)

Journal Papers – Published or Accepted

Topic Area: Multimodal Long Distance Transportation Systems – air/ground integration; networks in natural disasters & evacuation

- J1. Megan S. Ryerson, **Amy M. Kim** (2018). *A Drive for Better Air Service: How air service imbalances across neighboring regions integrate air and highway demands*. Transportation Research Part A: Policy and Practice, Vol. 114, Part A, 237-255.
- J2. **Amy M. Kim**, Megan S. Ryerson (2018). *A long drive: interregional airport passenger "leakage" in the U.S.* Tourism Management, Vol. 65, 237-244.

- J3. Matthew Woo, Tin Ying (Kathy) Hui, Kai Ernn Gan, Kexin Ren, **Amy M. Kim** (2017). *Reconstructing an Emergency Evacuation by Ground and Air: the Fort McMurray Wildfire*. Transportation Research Record, Vol. 2604, 63-70.
- J4. Qian Fu, **Amy M. Kim** (2016). *Supply-and-demand models for exploring relationships between smaller airports and neighboring hub airports in the U.S.* Journal of Air Transport Management. Vol. 52, 67-79.

Topic Area: Sustainable Northern Transportation Systems Analysis

- J5. Yunzhuang Zheng, **Amy M. Kim** (2017). *Rethinking Business-As-Usual: Mackenzie River Freight Transport in the Context of Climate Change Impacts in Northern Canada*. Transportation Research Part D: Transport and Environment, Vol. 53, 276-289.
- J6. Qianqian Du, **Amy M. Kim** (2017). *Modeling multimodal freight transportation scenarios in Northern Canada under climate change impacts*. Research in Transportation Business Management (World Conference on Transport Research 2016 special issue), Vol. 23, 86-96.

Topic Area: Mobile Photo Radar – program design (resource allocation & scheduling); safety impacts

- J7. Ran Li, Karim El-Basyouny, **Amy M. Kim**, Suliman Gargoum (2017). *Relationship between road safety and mobile photo enforcement performance indicators: A case study of the city of Edmonton*. Journal of Transportation Safety and Security, Vol. 9(2), 195-215.
- J8. Suliman Gargoum, Karim El-Basyouny, **Amy M. Kim** (2016). *Towards Setting Credible Speed Limits: Identifying Factors that Affect Driver Compliance on Urban Roads*. Accident Analysis and Prevention. Vol. 95, Part A, 138-148.
- J9. **Amy M. Kim**, Xiaobin Wang, Karim El-Basyouny, Qian Fu (2016). *Operating a Mobile Photo Radar Enforcement Program: A Framework for Site Selection, Resource Allocation, Scheduling, and Evaluation*. Case Studies in Transport Policy, Vol. 4(3), 218-229.
- J10. Yang Li, **Amy M. Kim**, Karim El-Basyouny, Ran Li (2016). *Using GIS to interpret automated speed enforcement guidelines and guide deployment decisions in mobile photo enforcement programs*. Transportation Research Part A: Policy and Practice. Vol. 86, 141-158.
- J11. Ran Li, Karim El-Basyouny, **Amy Kim** (2015). *A Before-and-After Empirical Bayes Evaluation of Automated Mobile Speed Enforcement on Urban Arterial Roads*. Transportation Research Record, Vol. 2516, 44-52.

Topic Area: Air Traffic Operations – air traffic flow management, airport operations analysis

- J12. Kexin Ren, **Amy M. Kim**, Kenneth Kuhn. *Explorations of the Evolution of Airport Ground Delay Programs*. Accepted for publication in Transportation Research Record, January 2018. DOI: 10.1177/0361198118782272
- J13. **Amy M. Kim** (2016). *Impacts of changing flight demands & throughput performance on airport delays through the Great Recession*. Transportation Research Part A: Policy and Practice. Vol. 86, 19-34.
- J14. **Amy Kim**, Rokib S.A., Yi Liu (2015). *Refinements to a Procedure for Estimating Airfield Capacity*. Transportation Research Record, Vol. 2501, 18-24.
- J15. **Amy Kim**, Mark Hansen (2015). *Some insights into a sequential resource allocation mechanism for en route air traffic*. Transportation Research Part B: Methodological. Vol. 79, 1-15.
- J16. **Amy Kim**, Mark Hansen (2013). *Deconstructing Delay: A Non-Parametric Approach to Analyzing Delay Changes in Single Server Queuing Systems*. Transportation Research Part B: Methodological. Vol. 58, 119-133.
- J17. **Amy Kim**, Mark Hansen (2013). *A Framework for the Assessment of Collaborative En Route Resource Allocation Strategies*. Transportation Research Part C: Emerging Technologies. Vol. 33, 324-339.

J18. **Amy Kim**, Mark Hansen (2010). *Validation of Runway Capacity Models*. Transportation Research Record, Vol. 2177, 69-77.

Cycling

J19. Laura Cabral, **Amy M. Kim**, John Parkins (2018). *Bicycle ridership and intention in a northern, low-cycling city*. Travel Behaviour and Society, Vol. 13, 165-173.

Other Topic Areas

J20. Danyang Sun, Karim El-Basyouny, Shewkar Ibrahim, **Amy M. Kim**. *Are school zones effective in reducing speeds and improving safety?* Accepted for publication in the Canadian Journal of Civil Engineering, June 2018. <https://doi.org/10.1139/cjce-2018-0060>

J21. Suliman Gargoum, **Amy M. Kim**, Hui Zhang, Tony Qiu (2017). *Towards Establishing Effective Commercial Driver Training Standards: Analysis of Industry opinions from Alberta*. Canadian Journal of Civil Engineering, Vol. 44(11), 899-910.

J22. Suliman Gargoum, Yang Li, Karim El-Basyouny, **Amy M. Kim**. (2017). *Factors Impacting the Classification of Road Segments into High/Low Speed-Collision Regimes*. Transportation Research Record, Vol. 2659, 98-105.

J23. Xu Han, Pengfei Li, Rajib Sikder, Tony Z. Qiu, **Amy Kim** (2014). *Development and Evaluation of an Adaptive Transit Signal Priority Control with Updated Transit Delay Model*. Transportation Research Record, Vol. 2438, 45-54.

Papers Submitted and/or Under Revision

S1. Laura Cabral, **Amy M. Kim**, Manish Shirgaokar. *Low-Stress Bicycling Connectivity: Assessment of the Network Build-Out in Edmonton, Alberta, Canada*. Under review.

S2. Kasturi Mahajan, **Amy M. Kim**. *Vulnerability assessment and capacity scan of Alberta's provincial highway network*. Under review.

S3. Yang Li, Jiaohong Xie, **Amy M. Kim**, Karim El-Basyouny. *Investigating tradeoffs between optimal mobile photo enforcement program plans*. Under review.

S4. Md Hadiuzzaman; D M Ghius Malik; Saurav Barua; Tony Z. Qiu; **Amy M. Kim**. *Modeling Passengers' Perceptions of Intercity Train Service Quality for Regular and Special Days*. Under review.

S5. Yang Li, **Amy M. Kim**, Karim El-Basyouny. *A multi-objective resource deployment plan for mobile photo enforcement*. Under review, submitted April 2016. Draft version available [online](#).

Conference Papers (presenter *)

C1. Tin Ying (Kathy) Hui, **Amy M. Kim***. *A review and case study of anonymous cell phone data for intercity travel applications*. Transportation Research Board Annual Meeting, January 2018, Washington DC.

C2. Yang Li*, **Amy M. Kim**, Karim El-Basyouny. *Scheduling resources in a mobile photo enforcement program*. 4th International Conference on Transportation Information and Safety (ICTIS 2017), August 2017, Banff AB.

C3. Tin Ying (Kathy) Hui*, Chenhao Wang, **Amy M. Kim**, Tony Z. Qiu. *Investigating the Use of Anonymous Cellular Phone Data to Determine Intercity Travel Volumes and Modes*. Transportation Research Board Annual Meeting, Jan. 2017, Washington DC.

C4. Yunzhuang Zheng, **Amy M. Kim***, Qianqian Du. *Assessing Current and Future Mackenzie River Freight Volumes in the Context of Climate Change Impacts*. Canadian Society for Civil Engineering Annual Conference, June 2016, London ON.

C5. Qian Fu, **Amy Kim***. *A Feedback Model for Assessing Out-of-Region Airport Leakage*. Canadian Transportation Research Forum, May 2015, Montreal.

- C6. Ran Li*, Karim El-Basyouny, **Amy Kim**. *A City-Wide Safety Analysis of Mobile Speed Enforcement*. Canadian Association of Road Safety Professionals (CARSP) Conference, May 2015, Ottawa.
- C7. Rokib S.A., Md. Ahsanul Karim*, Tony Qiu, **Amy Kim**. *Origin-Destination Trip Estimation from Anonymous Cell Phone and Foursquare Data*. Transportation Research Board Annual Meeting, January 2015, Washington, DC.
- C8. Xiaobin Wang, **Amy Kim***, Karim El-Basyouny. *Development of a Program Framework for Mobile Photo Radar Enforcement*. Transportation Research Board Annual Meeting, January 2015, Washington, DC.
- C9. Xu Han, Pengfei Li, Tony Z. Qiu, **Amy Kim***. 2013. *Transit Signal Priority Impact Analysis and Evaluation in the City of Edmonton*. 2013 Transportation Association of Canada Annual Conference and Exhibition, September 2013, Winnipeg.
- C10. **Amy Kim***. *The Effects of User Competition in Air Traffic Management Initiatives*. 5th International Conference on Research in Air Transportation, May 2012, Berkeley. (Best Paper, Socioeconomic & Institutional Challenges track).
- C11. **Amy Kim*** and Mark Hansen. *Collaborative Rerouting in the Airspace Flow Program: A Framework for User-cost Based Performance Assessment*. 4th International Conference on Research in Air Transportation, June 2010, Budapest.
- C12. **Amy Kim***, Mark Hansen. *Validation of Runway Capacity Models*. Air Traffic Management Seminar, July 2009, Napa.
- C13. **Amy Kim***, Mark Hansen. *Deconstructing Delay: Demand and Capacity at the New York Airports*. 3rd International Conference on Research in Air Transportation, June 2008, Fairfax, VA.
- C14. **Amy Kim***, Yonnel Gardes, Adolf D. May. *Application of Paramics Model in High Occupancy Vehicle Lane Operations*. ITS World Congress, Oct. 2002, Chicago.
- C15. **Amy Kim***, Mark Baker and Laurence Rilett. *Performance Measure Definition Using Microsimulation Based Techniques*. Canadian ITE 2006 Conference, May 2006, Banff.

Presentations (presenter *)

1. Kasturi Mahajan*, **Amy M. Kim**. *Vulnerability Assessment of Alberta's Highway Network Under Extreme Events*. Canadian Institute for Transportation Engineers Annual Conference, June 2018, Edmonton, AB.
2. Laura Cabral*, **Amy M. Kim**. *The Edmonton Downtown Bike Network: Initial Usage Insights*. Canadian Institute for Transportation Engineers Annual Conference, June 2018, Edmonton, AB.
3. **Amy M. Kim***, Yang Li, Karim El-Basyouny. *A Resource Scheduling and Decision Support Model for Mobile Photo Enforcement*. Road Safety on Five Continents (RS5C), May 2018, Jeju, Korea.
4. **Amy M. Kim***, Kexin Ren, Kenneth Kuhn. *Explorations of the Evolution of Airport Ground Delay Programs*. Transportation Research Board Annual Meeting, Jan. 2018, Washington DC.
5. Yunzhuang Zheng, **Amy M. Kim***. *Rethinking Business-As-Usual: Mackenzie River Freight Transport in the Context of Climate Change Impacts in Northern Canada*. Transportation Research Board Annual Meeting, January 2017, Washington DC.
6. Qianqian Du, **Amy M. Kim***, Yunzhuang Zheng. *Understanding multimodal freight transportation scenarios in Northern Canada under climate variability*. World Conference on Transportation Research, July 2016, Shanghai.
7. Yang Li*, **Amy M. Kim**, Karim El-Basyouny. *Mobile Photo Enforcement: Visualizing Program Guidelines and Deployment Decisions*. 8th International Conference on Urban Traffic Safety, April 2016, Edmonton, AB.

8. Ran Li, Karim El-Basyouny*, **Amy Kim**. *A Before-and-After Empirical Bayes Evaluation of Automated Mobile Speed Enforcement on Urban Arterial Roads*. Conference proceedings, Transportation Research Board Annual Meeting, January 2015, Washington, DC.
9. **Amy Kim***. *The Potential Impacts of a Northern Shipping Route into Canada via the Arctic*. International Conference for Transportation Innovation, November 2014, Edmonton, AB.
10. **Amy Kim***. *Refinements to a Procedure for Estimating Airfield Capacity*. INFORMS Annual Meeting, November 2014, San Francisco.
11. Rajib Sikder and **Amy Kim***. *Reliability considerations in bus route service planning*. Transportation Association of Canada Annual Conference, September 2014, Montreal.
12. Xu Han*, Pengfei Li, Rajib Sikder, Tony Z. Qiu, **Amy Kim**. *Development and Evaluation of an Adaptive Transit Signal Priority Control with Updated Transit Delay Model*. Transportation Research Board Annual Meeting, Jan. 2014, Washington, DC.
13. **Amy Kim***. *ADS-B and NAV CANADA's Priority Handling over the Hudson Bay*. 91st Annual Meeting of the Transportation Research Board, January 2012, Washington, DC.
14. **Amy Kim***, Mark Hansen. *The Effects of Competition on Air Traffic Management Initiatives*. 1st Annual INFORMS TSL Workshop on Congestion Management of Transportation Systems on the Ground and in the Air, June 2011, Asilomar, CA.
15. **Amy Kim***, Mark Hansen. *Comparison of Strategies for Collaborative Rerouting in the Airspace Flow Program*. INFORMS Annual Meeting, October 2009, San Diego.
16. **Amy Kim***, Mark Hansen. *Validation of Runway Capacity Models*. Transportation Research Board Annual Meeting, January 2009, Washington, DC.
17. **Amy Kim***, Mark Hansen. *Deconstructing Delay: Case Study of Demand and Capacity at the New York Airports*. Transportation Research Board Annual Meeting, Washington, DC, January 2008.
18. **Amy Kim***, Mark Hansen. *Deconstructing Delay: Demand and Capacity at the New York Airports*. INFORMS Annual Meeting, October 2007, Seattle.
19. **Amy Kim*** and Alexander Skabardonis. *Freeway Weaving Analysis*. Poster at 13th University of California Transportation Center Student Conference, April 2007, Los Angeles.

Technical Reports (selected)

1. Kasturi Mahajan, **Amy Kim**. *Vulnerability Assessment and Capacity Scan of Alberta's Highway Network*, Alberta Transportation. Centre for Smart Transportation Final Project Report, June 2018.
2. Kathy Hui, **Amy Kim**, Matthew Woo, Kexin Ren. *Reconstruction of the multimodal Fort McMurray wildfire evacuation using multiple data sources*. Alberta Transportation. Centre for Smart Transportation Final Project Report, March 2017.
3. Matthew Woo, **Amy Kim**, Kathy Hui, Naomi Li, Kexin Ren. *Identifying Congestion Management Strategies for Urban Highways in Alberta*. Alberta Transportation. Centre for Smart Transportation Final Project Report, February 2017.
4. Yunzhuang Zheng, **Amy Kim**, Aalyssa Atley, Qianqian Du. *The Potential Impacts of a Northern Shipping Route into Canada via the Arctic*. Northern Transportation Adaptation Initiative (Transport Canada). Centre for Smart Transportation Project Report, July 2016.
5. Naomi Li, **Amy Kim**, Karim El-Basyouny. *A multi-objective resource allocation model for a mobile photo enforcement (MPE) program*. Office of Traffic Safety, City of Edmonton. Centre for Smart Transportation Research Report, April 2016.
6. Naomi Li, **Amy Kim**, Karim El-Basyouny, Ran Li. *Using GIS to Visualize Automated Speed Enforcement Guidelines*. Office of Traffic Safety, City of Edmonton. Centre for Smart Transportation Research Report, April 2016.

7. Ran Li, Karim El-Basyouny, **Amy Kim**, Suliman Gargoum. *Relationship between road safety and mobile photo enforcement performance*. Office of Traffic Safety, City of Edmonton. Centre for Smart Transportation Research Report, April 2016.
8. Hui Zhang, Xu Wang, Qian Fu, Tony Qiu, **Amy Kim**. *Global Policy and Practice Review for Commercial Driver Certification and Training*. Alberta Motor Transport Association. Smart Transportation Research Report, November 2015.
9. Rajib Sikder, Gang Liu, Yuwei Bie, Cheng Lan, Tony Z. Qiu, **Amy Kim**. *Phase II: Performance Evaluation and Modelling of Transit Signal Priority (TSP) System in the City of Edmonton*. Edmonton Transit System. Centre for Smart Transportation Research Report, Dec. 2014.
10. Aalyssa Atley, Md Ahsanul Karim, **Amy Kim**, Tony Z. Qiu. *Transportation System Management: Review and Recommendations*. Transportation Planning, City of Edmonton. Centre for Smart Transportation Research Report, November 2014.
11. Ran Li, Karim El-Basyouny, **Amy Kim**. *Photo Enforcement Analysis Report*. Office of Traffic Safety, City of Edmonton. Centre for Smart Transportation Research Report, June 2014.
12. Xiaobin Wang, **Amy Kim**, Karim El-Basyouny. *Initialization Plan for the Deployment of Mobile Photo Radar Enforcement in the City of Edmonton*. Office of Traffic Safety, City of Edmonton. Centre for Smart Transportation Research Report, April 2014.
13. Xu Han, Pengfei Li, Rajib Sikder, Tony Z. Qiu, **Amy Kim**. *Phase 1: Performance Evaluation and Modelling of Transit Signal Priority (TSP) System in the City of Edmonton*. Edmonton Transit System. Centre for Smart Transportation Research Report, December 2013.
14. **Amy Kim**. *Fixed track systems for airport ground access: a literature review*. Edmonton Airports. Centre for Smart Transportation Research Report, January 2013.
15. Leigh Fisher, Landrum & Brown, CDM Smith, George Mason University, **University of California Berkeley**, Presentation & Design, Inc. (2012). ACRP Report 79: Evaluating Airfield Capacity. Airport Cooperative Research Program, Transportation Research Board.
16. Alexander Skabardonis and **Amy Kim**. *Weaving Analysis, Evaluation, and Refinement*. California PATH Research Report UCB-ITS-PRR-2010-19, April 2010.
17. Yonnel Gardes, **Amy Kim** and Adolf D. May. *Bay Area Simulation and Ramp Metering Study –Year 2 Report*. California PATH Research Report UCB-ITS-PRR-2003-9, March 2003.

Other Contributions

Invited Seminars, Workshops, and Panels

1. *Using New Data Sources to Understand Use of the City of Edmonton's Downtown Bike Grid*, keynote presentation at 2018 International Conference on Urban Traffic Safety, Edmonton, July 10 2018.
2. *Quantifying Aviation Operational Performance in Northern Canada*, presentation at Northern Air Transport Association 42nd Annual General Meeting, Whitehorse, April 25 2018.
3. *Rethinking northern transportation infrastructure under climate change*, presentation at Centre for the North workshop: The Northern and Remote Infrastructure Environment: Evolving Construction, Partnership, and Financing Approaches, Calgary, November 23 2017.
4. *The Transportation Sharing Economy in Canada: State of the Research & Practice in Carsharing, Bikesharing, Ridesharing, and Ride Sourcing*, presentation at Korea Research Institute for Human Settlements (KRIHS) workshop: Shared-use Mobility to Improve Sustainability in Metropolitan Areas, Sejong, Korea, October 19 2017.
5. *Transportation engineering collaborations*, presentation at Joint Workshop Tsinghua University – University of Alberta Energy & Environment, Edmonton, October 5-6 2017.

6. *Air Transport in Northern Canada: Modeling the impacts of infrastructure and weather on operational performance*, presentation at Northern Air Transport Association 41st Annual General Meeting, Yellowknife, April 25 2017.
7. *Mackenzie River Freight Transport in the Context of Climate Change Impacts*, presentation at UAlberta North Conversation Series, Edmonton, February 9 2017.
8. *Reconstructing an Emergency Evacuation by Ground and Air: the Fort McMurray Wildfire*, presentation at Alberta Transportation TRANS Talks, October 11 2016.
9. Panel member, *Metrics and Performance Analysis*, NEXTOR 2 Symposium sponsored by the Federal Aviation Administration, University of Maryland, College Park, Sept. 29-30 2016.
10. *Impacts of changing flight demands on throughput performance and airport delays*, presentation at Global Workshop on Aviation System Performance, Tianjin, July 21-23 2016.
11. *Multimodal Transportation Systems Analysis and Planning*, presentation at Workshop on Smart Vehicles and Transportation, Tsinghua University, Beijing, July 20 2016.
12. *Mobile Photo Enforcement: Visualizing Program Guidelines and Deployment Decisions*, presentation at Urban Traffic Safety workshop, Wuhan University of Technology, Wuhan, July 18 2016.
13. *Mobile Photo Enforcement: Visualizing Program Guidelines and Deployment Decisions*, seminar presentation at University of Waterloo, Waterloo, May 30 2016.
14. *The Potential Impacts of a Northern Shipping Route into Canada via the Arctic*, presentation at Canadian Institute of Transportation Engineers Northern Alberta Section luncheon, Edmonton, February 4 2015.
15. *The Potential Impacts of a Northern Shipping Route into Canada via the Arctic*, presentation at International Conference for Transportation Innovation, Edmonton, October 22 2014.
16. *Long Distance Travel*, seminar for the Canadian Institute of Transportation Engineers national online course, March 14 2013.
17. *ADS-B and NAV CANADA's Priority Handling over the Hudson Bay*, presentation at 91st Annual Meeting of the Transportation Research Board, Washington, DC, January 2012.
18. *Collaborative Resource Allocation Strategies for En Route Air Traffic Flow Management*, seminar at Metron Aviation, Herndon, VA, August 2011.

Magazine Articles

1. Kathy Hui, Matthew Woo, **Amy M. Kim**. "The Fort McMurray Wildfire: Reconstructing a Multimodal Evacuation Process," *CITE Transportation Talk!*, Fall 2016, Vol. 38, No. 3.

Press

1. The Star Edmonton, "U of A researcher shows increased connectivity from downtown bike network," July 21, 2018.
2. U of A Engineer Magazine, "Lords of the Rings," Spring 2017.
3. Edmonton Journal, "University researcher pitches high-tech solution for Edmonton's bogged-down buses," November 9, 2015.

Research Grants and Projects

Current

2018-2019 Principal Investigator

Funded by: UAlberta-Tsinghua Collaborative Research Fund

Title: Traffic Signal Control Methods Based on Deep Reinforcement Learning

Value: \$30,000 for 6 months

2018 Principal Investigator

Funded by: NSERC Engage Grant

- 2017-2018 Co-Principal Investigator
Title: Sustainable & resilient northern transportation infrastructure: Context, data, model building
Value: \$25,000 for 6 months
Funded by: City of Leduc
Title: Develop an Integrated Speed Management Program to Improve Safety on Queen Elizabeth II Highway within City of Leduc
Value: \$30,840 for 2 years
- 2018 Principal Investigator
Funded by: Transport Canada
Title: Identifying causes of recurring delays at northern airports
Value: \$22,000 for 9 months
- 2017-2019 Principal Investigator
Funded by: City of Edmonton
Title: Exploring changing cycling patterns in the City of Edmonton and development of a continuous performance monitoring framework
Value: \$140,400 for 2.5 years
- 2013-2020 Principal Investigator
Funded by: NSERC Discovery Grant
Title: Advancing Methods for Understanding Multimodal Intercity Transportation Characteristics
Value: \$144,000

Past

- 2015-2018 Co-Principal Investigator (*with co-PIs in transportation engineering group*)
Funded by: Alberta Transportation
Title: Principal Investigator on the following sub-contracts:
1. Identification of Congestion Management Strategies for Urban Highways
2. Reconstruction of Fort McMurray wildfire evacuation using multiple data sources
3. Capacity Scan and Vulnerability Assessment of Alberta's Roadway Network
Value: \$900,000 (25%, or \$225,000 for projects above)
- 2017-2018 Principal Investigator
Funded by: NSERC Connect Grant
Value: \$4,750
- 2016 Principal Investigator
Funded by: NSERC Grant
Value: \$4,920
- 2014-2016 Principal Investigator
Funded by: Transport Canada, Northern Transportation Adaptation Initiative
Title: The Potential Impacts of a Northern Shipping Route into Canada via the Arctic
Value: \$194,675 for 2 years
- 2014 Principal Investigator
Funded by: Edmonton Transit System
Title: Phase II: Performance Evaluation and Modelling of Transit Signal Priority System in the City of Edmonton
Value: 75,000 for 1 year
- 2014 Principal Investigator

- Funded by: City of Edmonton
Title: Transportation System Management: Review and Recommendations
Value: \$40,000 for 6 months
- 2013-2014 Co-Principal Investigator (*with co-PI in transportation engineering group*)
Funded by: Alberta Motor Transport Association, NSERC CRD Grant
Title: Policy and Practice Global Review for Commercial Driver Certification and Training
Value: \$200,000 for 2 years
- 2013 Co-Principal Investigator (*with co-PIs in transportation engineering group*)
Funded by: Canadian Foundation for Innovation; Alberta Enterprise & Advanced Education
Title: Development of an infrastructure for the investigation of new technologies for traffic and transportation applications
Value: \$252,622 for 1 year
- 2012-2017 Principal Investigator & Co-Principal Investigator (multiple contracts)
Funded by: City of Edmonton Office of Traffic Safety
Title: Deployment Strategies for the City of Edmonton's Mobile Photo Enforcement Program
Value: \$335,280 for 5 years
- 2013 Co-Principal Investigator (*with co-PI in transportation engineering group*)
Funded by: Edmonton Transit System
Title: Transit Signal Priority Evaluation for the Southeast Bus Corridor; Performance Evaluation & Estimation of Transit Signal Priority Systems on Three Bus Corridors
Value: \$150,000 for 2 years
- 2012 Principal Investigator
Funded by: Edmonton Airports
Title: A Review of the Relationships Between Airports and High Speed Rail, and their Impacts on Airport Competitiveness
Value: \$23,230 for 1 year
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Awards and Distinctions

- 2018 McCalla Professorship, University of Alberta (2018-2020)
- 2017 Early Career Researcher Award, Department of Civil & Environmental Engineering
Best Paper, 2017 Transportation Research Board Emergency Evacuations (ABR30)
- 2012 Best Paper, Socioeconomic & Institutional Challenges track, 5th International Conference on Research in Air Transportation
- 2007 Dwight D. Eisenhower Transportation Fellowship Program, Federal Highways Administration – Multi-year Doctoral Fellowship (held until 2010)
- 2006 Dwight D. Eisenhower Transportation Fellowship Program, Federal Highways Administration – 1 year Doctoral Fellowship
University of California Transportation Center Award
- 2001 UC Berkeley Civil & Environmental Engineering Department Grant
University of Waterloo First Class Honours, Deans Honour List
Natural Science and Engineering Research Council Post Graduate Scholarship (*declined*)
Ontario Graduate Scholarship, Province of Ontario (*declined*)
First Prize, Ontario Hot Mix Producers Association paper competition
Stanford Fleming Co-op Proficiency Medal, University of Waterloo
Casimir Stanislaus Gzowski Medal for Communications Excellence, University of Waterloo
Delcan Award in Memory of Charles DeLeuw, University of Waterloo
- 2000 Blue Circle Cement Prize, University of Leeds (highest score in Fall 1999 civil eng. class)
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SNC Lavalin Engineers and Constructors Award, University of Waterloo
 1998 Sandford Fleming Foundation Award, University of Waterloo

Teaching

Classes

Course	Description	Term	Enrollment
CIVE 411	Transportation Engineering II (elective)	F2017	73
CIVE 613	Transportation Systems & Demand Analysis (elective)	F2017	17
CIVE 719	Topics in Transportation Policy (elective; new course)	W2017	8
CIVE 411	Transportation Engineering II (elective)	F2016	59
CIVE 613	Transportation Systems & Demand Analysis (elective)	F2016	5
CIVE 613	Transportation Systems & Demand Analysis (elective)	W2016	8
CIVE 411	Transportation Engineering II (elective)	F2015	36
CIVE 612	Transportation Planning: Methodology & Techniques (required)	F2015	11
CIVE 612	Transportation Planning: Methodology & Techniques (required)	W2015	12
CIVE 411	Transportation Engineering II (elective)	F2014	35
CIVE 612	Transportation Planning: Methodology & Techniques (required)	F2013	14
CIVE 411	Transportation Engineering II (elective)	F2013	23
CIVE 613	Transportation Demand & Policy Analysis (elective)	W2013	11
CIVE 411	Transportation Engineering II (elective; new course)	F2012	39
CIVE 612	Transportation Planning: Methodology & Techniques (required)	F2012	11
CIVE 613	Transportation Demand Management & Policy (elective)	W2012	10
CIVE 612	Transportation Planning: Methodology & Techniques (required)	F2011	17

Other Teaching Activities

- Spring/Summer 2016 CIV E 719 Intercity Travel: Issues, Data, and Emerging Techniques for Analysis (graduate): reading course given to 2 graduate students.
- Fall 2017 CMPUT 697 Topics in Computing Science (graduate): Provided airport operations dataset and tutorial for student term projects; 8/20 students chose the dataset.
- Winter 2013 Canadian Institute of Transportation Engineers National Course, Special Topics in Transportation Engineering: 2-hour online lecture, "Long Distance Travel."

Supervision

Category	Supervisor	Term	
Graduate students	Kaleab Yirgu (Ph.D.)	September 2018–fall 2022	
	Bryan Tran (M.Sc.)	September 2018–summer 2020	
	Huanan Li (Ph.D.)	January 2018–summer 2021	
	Sabrina Ohi (Ph.D.)	September 2017–summer 2021	
	Gloria Duran (Ph.D.), CONACYT	January 2017–winter 2021	
	Naomi Li (Ph.D., co-supervised 75%)	September 2014–winter 2019	
	Laura Cabral (M.Sc.), NSERC CGS-M	May 2017–summer 2019	
	Josh Schmaltz (M.Eng.)	summer 2020	
	Completed	Kasturi Mahajan (M.Sc.)	September 2018
		Matthew Woo (M.Sc., co-supervised 75%)	April 2018
Kexin Ren (M.Sc.)		August 2017	
Kathy Hui (M.Sc.), NSERC CGS-M, QEII		August 2017	
Yunzhuang Zheng (M.Sc.)		August 2016	

	Rokib S.A. (M.Sc.)	April 2015
	Qian Fu (M.Sc.)	January 2015
	Rajib Sikder (M.Sc.)	January 2015
	Ran Li (M.Sc., co-supervised)	September 2014
	Xiaobin Wang (M.Sc.)	September 2014
	Xu Han (M.Sc., co-supervised)	December 2013
	Haohui Chen (M.Eng.)	April 2013
	Qi Chen (M.Eng.)	January 2013
Postdoctoral researchers	Qianqian Du (completed)	2015–2016
	Hui Zhang (co-supervised, completed)	2013–2015
	Pengfei Li (co-supervised, completed)	2012–2014
Undergraduate students	Zhihao Bi (MITACS)	Summer 2018
	Wenxin Wang (China Scholarship Council)	Summer 2018
	Robert Xu (co-op)	Summer 2018
	Jason Ng (Dean’s Research Award)	Winter 2018
	Marcus Yick (Dean’s Research Award)	Winter 2018
	Joey Ting (Dean’s Research Award)	Fall 2017
	Grant Szelewicki (Dean’s Research Award)	Fall 2017
	Yuelin Qiu (Dean’s Research Award)	Fall 2017
	Bryan Tran (Dean’s Research Award)	Winter 2016, Fall 2016, Fall 2017
	Jiaohong Xie (MITACS)	Summer 2017
	Noah Wishart (co-op)	Summer 2017
	Joseph Ireland (research assistant)	Winter 2017
	Laurel Flanagan (Dean’s Research Award)	Fall 2016
	Kai Ernn Gan (research assistant)	Summer 2015, Summer 2016
	Luis Vargas (research assistant)	Summer 2015
	Cameron Wakefield (NSERC USRA)	Summer 2012

Service

Appointments

- 2018 Member, University of Alberta Active Transportation Advisory Group
- 2017 Member, Networks of Expertise of the Northern Transportation Adaptation Initiative (NTAI)
Member, Executive Committee, Department of Civil & Environmental Engineering
Member, Transportation Research Board (TRB) Aviation System Planning (AV020) committee
- 2014 Communications Coordinator, TRB Airfield and Airspace Capacity and Delay (AV060) standing committee (completed as of W2017)
- 2013 Member, TRB Airfield and Airspace Capacity and Delay (AV060) standing committee
Member, Centre for Smart Transportation Steering Committee
- 2012 Secretary, TRB Airfield and Airspace Capacity and Delay (AV060) standing committee
Transportation group graduate student coordinator, Dept. of Civil & Environmental Engineering (completed as of 2018)
External Affairs Committee, Dept. of Civil & Environmental Engineering (completed as of F2017)

Journal Reviews

- 2018 Transportation Research Part B: Methodological, Transportation Research Part C: Emerging Technologies, Journal of Air Transport Management, Canadian Journal of Civil Engineering, Transport Policy, Sustainable Cities and Society
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- 2017 Transportation Research Part B: Methodological, Transportation Research Part C: Emerging Technologies, Transportation Research Part D: Energy and Environment, Journal of Air Transport Management, Transportation Research Part E: Logistics, Canadian Journal of Civil Engineering, Transportation Research Record, Journal of Air Transport Management, Case Studies on Transport Policy, Transportation Research Record
- 2016 Transportation Research Part B: Methodological, Transportation Research Part C: Emerging Technologies, Transportation Research Part E: Logistics, Transportation Research Record
- 2015 Transportation Research Part B: Methodological, Transportation Research Part C: Emerging Technologies, Transportation Research Record, EURO Journal on Transportation and Logistics
- 2014 Transportation Research Part A: Policy & Practice, Transportation Research Part B: Methodological, Transportation Research Part C: Emerging Technologies, Transportation Research Part D: Energy and Environment, Transportation Research Record, Canadian Journal of Civil Engineering, Journal of Advanced Transportation
- 2013 Transportation Research Part C: Emerging Technologies, Transportation Research Record, Canadian Journal of Civil Engineering
- 2010-2 Transportation Research Record

Proposal Reviews

NSERC Discovery Grant (2012; 2016; 2017)

Conference Reviews

Transportation Research Board, International Conference on Research in Air Transportation (ICRAT), Air Traffic Management Seminar, Canadian Society for Civil Engineering, COTA International Conference of Transportation Professionals, Air Transport Research Society (ATRS), American Society for Engineering Education (ASEE)

Other Activities

2014 INFORMS Aviation Applications Section student presentations judge (2014), U of A Engineering Ideas in Motion: Transportation Design Challenge (2016), Faculty of Engineering Graduate Research Symposium (2013-2016)

Conference and Technical Events Appointments

Technical Chair, Canadian ITE Annual Conference 2018

Scientific Committee Member, International Conference on Research in Air Transportation (2012-present)

Steering Committee Member, 2017 International Conference on Urban Traffic Safety

Scientific Committee Member, Global Workshop on Aviation System Performance (2016)

Professional Development and Outreach

Co-organizer, Women in Science and Engineering (WISE) Advancement Workshop (May 2017)

Canadian Institute of Transportation Engineers (CITE) National Course in Transportation: Special Topics in Transportation Engineering (Winter 2013) – Long Distance Travel

Licenses

APEGA Professional Engineer (Province of Alberta); State of California, Engineer-in-Training #118362

Examination Committees (excluding supervised students)

Internal (University of Alberta, Faculty of Engineering)

	Ph.D. Defence Committee	Ph.D. Candidacy Examination Committee	M.Sc. Supervisory Committee (Defence)
2018	2	1	
2017		4	2
2016	1		3
2015	3	1	4
2014			2
2013	1	6	3
2012		2	1
2011		2	1

External

Darcy Reynard: PhD candidacy, University of Alberta, Urban and Regional Planning (April 2018)

Alex Schare: PhD defence, University of Northern British Columbia, Natural Resources and Environmental Studies (March 2016)

Derek Yau: Master of City Planning defence, University of Manitoba, City Planning (Feb 2016)
