

complex and sustainable urban networks

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current position

Associate Professor, Research Associate Professor
and **Director** of the **Complex and Sustainable**
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Civil, Materials, and Environmental Engineering
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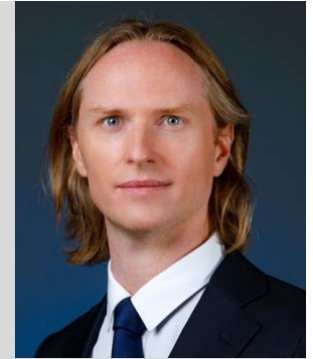
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web presence

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- [Research Gate](#)
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- [Twitter](#)



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01 education & skills

education

Massachusetts Institute of Technology (US) 2012
Post-Doctorate at Singapore-MIT Alliance for Research and Technology (SMART)

University of Toronto (Canada) 2010
Ph.D. in Civil Engineering
Thesis title: [The Properties and Effects of Metro Network Designs](#)

Ecole Centrale of Lyon (France) 2006
D.E.S.O. in Industrial Engineering: Innovation, Development
Exchange under Erasmus program

Imperial College London (UK) 2006
M.Eng. in Mechanical Engineering
1st class honours

languages

French: native
English: fluent
Spanish: conversational

IT skills

Python (including Scikit-Learn, TensorFlow, NumPy, SciPy, NetworkX, Matplotlib libraries), R, HTML, CSS, JavaScript, XML, C++, LaTeX, ArcGIS, AutoCAD, Adobe (Photoshop, Illustrator, InDesign, Dreamweaver), MS Office (Word, Excel, PowerPoint)

Derrible, S.

02 professional experience

University of Illinois at Chicago – Chicago (United States) **aug 2017 – pres.**
Department of Civil, Materials, and Environmental Engineering
Institute for Environmental Science and Policy (joint appointment)
Department of Computer Science (courtesy appointment)
Associate Professor and Research Associate Professor
Director of the Complex and Sustainable Urban Networks (CSUN) Lab

Institute for Research on Urban Sciences and Techniques **aug 2020 – pres.**
Institut de Recherche sur les Sciences et Techniques de la Ville (IRSTV) – Nantes (France)
Associate Researcher

University of Transport Technology – Hanoi (Vietnam) **jun 2019 – nov 2019**
Faculty of Civil Engineering
Visiting Professor

University of Illinois at Chicago – Chicago (United States) **aug 2012 – aug 2017**
Department of Civil and Materials Engineering
Institute for Environmental Science and Policy (joint appointment)
Assistant Professor and Research Assistant Professor
Director of the Complex and Sustainable Urban Networks (CSUN) Lab

Massachusetts Institute of Technology – Singapore (Singapore) **aug 2011 – jul 2012**
Singapore-MIT Alliance for Research and Technology – Future of Urban Mobility
Visiting Research Fellow

University of Toronto – Toronto (Canada) **aug – dec 2010**
Cities Centre
Post-Doctoral Researcher

University of Toronto – Toronto (Canada) **sep 2006 – jul 2010**
Department of Civil Engineering
Research Assistant and Teaching Assistant

Accenture Paris – Paris (France) **apr – jul 2006**
Business Analyst

Curriculum Vitae as of July 2022

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03 publications

refereed publications

1. Movahedi, A., Bahador Parsa, A., Rozhkov, A., Lee, D., Mohammadian, A., & **Derrible, S.**, "How is travel demand interrelated with electricity consumption? A spatiotemporal deep learning approach", under review
2. Lapamonpinyo, P., **Derrible, S.**, & Corman, F., "Real-Time Passenger Train Delay Prediction using Machine Learning: A Case Study with Amtrak Passenger Train Routes", under review
3. Lu, Z., Li, Y., Mo, W., & **Derrible, S.**, "Integration of Multi-Objective Spatial Optimization and Data-driven Interpretation to Direct the City-wide Sustainable Promotion of Building-based Decentralized Water Technologies", under review
4. Salon, D., Mirtich, L., Bhagat-Conway, M.W., Costello, A., Rahimi, E., Mohammadian, A., Chauhan, R.S., **Derrible, S.**, da Silva Baker, D., Khoeini, S., & Pendyala, R.M., "The Effects of the COVID-19 Pandemic on Telecommuting in the United States" under review
5. Chen, W., Cartensen, T., Wang, R., **Derrible, S.**, Rueda, D., Nieuwenhuijsen, M., & Liu, G., "The global history on bicycles: Patterns, drivers, and sustainability implications", *Communications Earth & Environment*, in press
6. Lapamonpinyo, P., **Derrible, S.**, & Corman, F., "[A Python tool and database of Amtrak departure and arrival times with weather information](#)", under review, available on engrXiv
7. Ngo, T.T.T., Pham, H.T., Acosta, J.G., & **Derrible, S.**, 2022 "[Predicting Bike-Sharing Demand Using Random Forest](#)", *Journal of Science and Transport Technology*, 2(2):13-21
8. Mohammadi, M., Rahimi, E., Davatgari, A., Javadinasr, M., Mohammadian, A., Bhagat-Conway, M.W., Salon, D., **Derrible, S.**, Pendyala, R., & Khoeini, S., 2022 "[Examining the Persistence of Telecommuting after the COVID-19 Pandemic](#)", *Transportation Letters*, 1-14, DOI: 10.1080/19427867.2022.2077582
9. Badhrudeen, M., Boria, E., Fonteix, G., **Derrible, S.**, & Siciliano, M., 2022 "[The C2G Framework to Convert Infrastructure Data from Computer-Aided Design \(CAD\) to Geographic Information Systems \(GIS\)](#)", *Informatics*, 9(2):42
10. Badhrudeen, M., **Derrible, S.**, Verma, T., Kermanshah, A., & Furno, A. 2022 "[A Geometric Classification of World Urban Road Networks](#)", *Urban Science*, 6(1):11
11. Sindhusuta, Chi, S-W, & **Derrible, S.**, 2022 "[Text-mining based literature review of meshfree methods](#)", *Computer Assisted Methods in Engineering and Science*, 28(4):265–290
12. Jalloul, H., Choi, J., Yesiller, N., Manheim, D., & **Derrible, S.**, 2022 "[A systematic approach to identify, characterize, and prioritize the data needs for quantitative sustainable disaster debris management](#)", *Resources, Conservation & Recycling*, 180:106174
13. Arora, M., Yeow, L.W., Cheah, L., & **Derrible, S.**, 2022 "[Assessing Water Circularity in Cities: Methodological Framework with a Case Study](#)", *Resources, Conservation & Recycling*, 178:106042
14. Parsa, A.B., Chauhan, R.S., Taghipour, H., **Derrible, S.**, & Mohammadian, A., 2022 "[A novel deep ensemble based approach to detect crashes using sequential traffic data](#)", *IATSS Research*, 46(1):122-129
15. Asif, K., Zhang, L., **Derrible, S.**, Indacochea, J.E., Ozevin, D., & Ziebart, B., 2022 "[Machine learning model to predict welding quality using air-coupled acoustic emission and weld inputs](#)", *Journal of Intelligent Manufacturing*, 33(3):881–895
16. Truong, T.M.T, Ly, H.-B., Lee, D., Pham, B.T., & **Derrible, S.**, 2021 "[Analyzing travel behavior in Hanoi using Support Vector Machine](#)", *Transportation Planning and Technology*, 44(8):843-859
17. Jafari Gukeh, M., Moitra, S., Ibrahim, A.N., **Derrible, S.**, & Megaridis, C.M., 2021 "[Machine Learning Prediction of TiO2-](#)

- [Coating Wettability Tuned via UV Exposure](#)", *ACS Applied Materials & Interfaces*, 13(38): 46171-46179
18. Chauhan, R.S., Conway, M.W., Capasso da Silva, D., Salon, D., Shamshirpour, A., Rahimi, E., Khoeini, S., Mohammadian, A., **Derrible, S.**, & Pendyala, R., 2021 "[A database of travel-related behaviors and attitudes before, during, and after COVID-19 in the United States](#)", *Scientific Data*, 8(1):245.
 19. Broesicke, O.A., Yan, J., Thomas, V., Grubert, E., **Derrible, S.**, & Crittenden, J.C., 2021 "[Combined Heat and Power May Conflict with Decarbonization Goals—Air Emissions of Natural Gas Combined Cycle Power versus Combined Heat and Power Systems for Commercial Buildings](#)", *Environmental Science and Technology*, 55(15):10645-10653
 20. Mirtich, L., Conway, M.W., Salon, D., Kedron, P., **Derrible, S.**, Khoeini, S., Mohammadian, A., & Rahimi, E., "[How stable are transport-related attitudes over time?](#)", Findings, DOI: 10.32866/001c.24556
 21. Salon, D., Conway, M.W., Capasso da Silva, D., Chauhan, R.S., **Derrible, S.**, Mohammadian, A., Khoeini, S., Parker, N., Mirtich, L., Shamshirpour, A., Rahimi, E., & Pendyala, R., 2021 "[The potential stickiness of pandemic-induced behavior changes in the United States](#)", *Proceedings of the National Academy of Sciences (PNAS)*, 118(27): e2106499118
 22. Capasso da Silva, D., Khoeini, S., Salon, D., Conway, M.W., Chauhan, R.S., Pendyala, R., Shamshirpour, A., Rahimi, E., Magassy, T., Mohammadian, A., & **Derrible, S.**, 2021, "[How are Attitudes Toward COVID-19 Associated with Traveler Behavior During the Pandemic?](#)", *Findings*, DOI: 10.32866/001c.24389
 23. Chauhan, R.S., Capasso da Silva, D., Salon, D., Shamshirpour, A., Rahimi, E., Sutradhar, U., Khoeini, A., Mohammadian, A., **Derrible, S.** & Pendyala, R., 2021 "[COVID-19 Related Attitudes and Risk Perceptions across Urban, Rural, and Suburban Areas in the United States](#)" *Findings*, DOI: 10.32866/001c.23714
 24. **Derrible, S.**, Truong, T.T.M., Pham, H.T., & Nguyen, Q.H., 2021 "[Learning from Hanoi to imagine the future of water distribution](#)", *npj Urban Sustainability*, 1(1):9
 25. Movahedi, A., & **Derrible, S.**, 2021 "[Interrelationships between electricity, gas, and water consumption in large-scale buildings](#)", *Journal of Industrial Ecology*, 25(4):932
 26. Seyrfar, A., Ataei, H., Movahedi, A., & **Derrible, S.**, 2021 "[Data-Driven Approach for Evaluating the Energy Efficiency in Multifamily Residential Buildings](#)", *ASCE Practice Periodical on Structural Design and Construction*, 26(2):04020074
 27. Balasubramani, B., Badhrudeen, M., **Derrible, S.**, & Cruz, I., 2020 "[Smart Data Management of Urban Infrastructure using Geographic Information Systems](#)", *Journal of Infrastructure Systems*, 26(4):06020002
 28. **Derrible, S.**, Chester, M., & Guikema, S., 2020 "[Infrastructure Resilience to Climate Change](#)", *Journal of Infrastructure Systems*, 26(2): 02020001
 29. Barua, L., Zou, B., Noruzoliaee, M., & **Derrible, S.**, 2020 "[A Gradient Boosting Machine Approach to Predicting Airport Runway and Taxiway Pavement Conditions](#)", *International Journal of Pavement Engineering*, 22(13): 1673-1687
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 31. Dayeen, F.R., Sharma, A., & **Derrible, S.**, 2020 "[A Text Mining Analysis of the Climate Change Literature in Industrial Ecology](#)", *Journal of Industrial Ecology*, 24:276–284
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 33. Ly, H.-B., Le, L.M., Phi, L.V., Phan, V.-H., Tran, V.Q., Pham, B.T., Le, T.-T., & **Derrible, S.**, 2019 "[Development of an AI Model to Measure Traffic Air Pollution from Multisensor and Weather Data](#)", *Sensors*, 19:4941.

34. Lee, D., & **Derrible, S.**, 2019 "[Predicting Residential Water Consumption: Modeling Techniques and Data Perspectives](#)", *Journal of Water Resources Planning and Management*, 146(1): 04019067
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36. Lu, Z., Broesicke, O.A., Chang, M.E., Yan, J., Xu, M., **Derrible, S.**, Mihelcic, J.R., Schwegler, B., & Crittenden, J.C., 2019 "[Seven Approaches to Manage Complex Coupled Human and Natural Systems: A Sustainability Toolbox](#)", *Environmental Science and Technology*, 53(16):9341-9351
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38. Lee, D., Mulrow, J., Haboucha, C.J., **Derrible, S.**, & Shiftan, Y., 2019 "[Attitudes on Autonomous Vehicle Adoption using Interpretable Gradient Boosting Machine](#)", *Transportation Research Record*, 2613(11):865-878
39. Trabucco, J., Lee, D., **Derrible, S.**, & Marai, G.E., 2019 "[Visual Analysis of a Smart City's Energy Consumption](#)", *Multimodal Technologies and Interaction*, 3(2):30, 10.3390/mti3020030
40. Mulrow, J., Machaj, K., Deanes, J., & **Derrible, S.**, 2019 "[The state of carbon footprint calculators: An evaluation of calculator design and user interaction features](#)", *Sustainable Production and Consumption*, 18:33-40
41. **Derrible, S.**, 2019 "[An approach to designing sustainable urban infrastructure](#)", *MRS Energy and Sustainability*, 5(1):13
42. Lee, D., **Derrible, S.**, & Pereira, F., 2018 "[Comparison of Four Types of Artificial Neural Networks and Multinomial Logit Model for Travel Mode Choice Modeling](#)", *Transportation Research Record*, 2672(49):101-112
43. Wisetjindawat, W., **Derrible, S.**, & Kermanshah, A., 2018 "[Modeling the Effectiveness of Infrastructure and Travel Demand Management Measures to Improve Traffic Congestion During Typhoons](#)", *Transportation Research Record*, 2672(1):43-53
44. Ahmad, N., & **Derrible, S.**, 2018 "[An information theory based robustness analysis of energy mix in US States](#)", *Energy Policy*, 120:167-174
45. Ahmad, N., & **Derrible, S.**, Managi, S., 2018 "[A Network-Based Frequency Approach to Representing the Inclusive Wealth of World Countries](#)", *Journal of Environmental Management*, 218:348-354
46. Chancé, E., **Derrible, S.**, & Ashton, W., 2018 "[The need to adapt emerging sustainability audits to atypical business models](#)", *Clean Technologies and Environmental Policy*, 20(5): 1113-1118
47. Golshani, N., Shabanpour, R., Mahmoudifard, S., **Derrible, S.**, & Mohammadian, A., 2018 "[Modeling Travel Mode and Timing Decisions: Comparison of Artificial Neural Networks and Copula-based Joint Model](#)", *Travel Behaviour and Society*, 10:21-32
48. Chancé, E., Ashton, W., Mulrow, J., Norberto, J., **Derrible, S.**, & Guilbert, S., 2018 "[The Plant—An experiment in urban food sustainability](#)", *Environmental Progress & Sustainable Energy*, 37(1):82-90
49. Kermanshah, A., **Derrible, S.**, & Berkelhammer, M., 2017, "[Using Climate Models to Estimate Urban Vulnerability to Flash Floods](#)", *Journal of Applied Meteorology and Climatology*, 56(9):2637-2650
50. Akbarzadeh, M., Memarmontazerin, S., **Derrible, S.**, & Reihani, S., 2017, "[The Role of Travel Demand and Network Centrality on the Connectivity and Resilience of an Urban Street System](#)", *Transportation*, 46:1127-1141
51. Wisetjindawat, W., Kermanshah, A., **Derrible, S.**, & Fujita, M., 2017 "[Stochastic Modeling of](#)

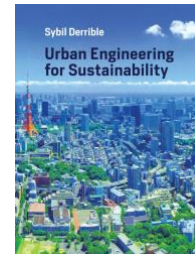
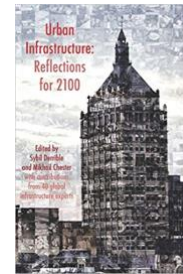
- [Road System Performance to Multi-Hazard Events: Flash Floods and Earthquakes](#)", *Journal of Infrastructure Systems*, 23(4):04017031
52. Tennant, A., Ahmad, S., & **Derrible, S.**, 2017 "[Complexity Analysis in the Sport of Boxing](#)", *Journal of Complex Networks*, 5(6):953-963
53. Mulrow, J., **Derrible, S.**, Ashton, W., & Chopra, S., 2017, "[Industrial Symbiosis at the Facility Scale](#)", *Journal of Industrial Ecology*, 21(3):559-571
54. Shabanpour, R., Golshani, N., **Derrible, S.**, Mohammadian, A., & Miralinaghi, M., 2017 "[Joint Discrete-Continuous Model of Travel Mode and Departure Time Choices](#)", *Transportation Research Record*, 2669:41-51
55. Peiravian, F., & **Derrible, S.**, 2017 "[Multi-Dimensional Geometric Complexity in Urban Transportation Systems](#)", *Journal of Transport and Land Use*, 10(1):589-625
56. Ahmad, N., **Derrible, S.**, & Cabezas, H., 2017 "[Using Fisher information to assess stability in the performance of public transportation systems](#)", *Royal Society Open Science*, 4: 160920
57. Wang, X., Koc, Y., **Derrible, S.**, Ahmad, N., Pino, W., & Kooij, R., 2017 "[Multi-Criteria Robustness Analysis of Metro Networks](#)", *Physica A: Statistical Mechanics and its Applications*, 474:19-31
58. **Derrible, S.**, 2017 "[Complexity in Future Cities: The Rise of Networked Infrastructure](#)", *International Journal of Urban Sciences*, 21(sup1): 68-86
59. Kermanshah, A., & **Derrible, S.**, 2017 "[Robustness of Road Systems to Extreme Flooding: Using Elements of GIS, Travel Demand, and Network Science](#)", *Natural Hazards*, 86(1):151-164
60. **Derrible, S.**, 2017 "[Urban Infrastructure is not a Tree: Integrating and Decentralizing Urban Infrastructure Systems](#)", *Environment and Planning B: Urban Analytics and City Science*, 44 (3):553-569
61. Ahmad, N., **Derrible, S.**, Eason, T., & Cabezas, H., 2016 "[Using Fisher Information to Track Stability in Multivariate Systems](#)", *Royal Society Open Science*, 3:160582
62. Amini, B., Peiravian, F., Mojarradi, M. & **Derrible, S.** 2016 "[Comparative Traffic Performance Analysis of Urban Transportation Network Structures](#)", *Transportation Research Record*, 2594:159-16
63. Karduni, A., Kermanshah, A., & **Derrible, S.**, 2016 "[A protocol to convert spatial polyline data to network formats and applications to world urban road networks](#)", *Scientific Data*, 3:160046
64. Kermanshah, A., & **Derrible, S.**, 2016 "[A Geographical and Multi-Criteria Vulnerability Assessment of Transportation Networks Against Extreme Earthquakes](#)", *Reliability Engineering & System Safety*, 153:39-49
65. Mohareb, E., **Derrible, S.**, & Peiravian, F., 2016 "[Intersections of Jane Jacobs' Conditions for Diversity and Low-Carbon Urban Systems: Global Look at Four Cities](#)", *ASCE Journal of Urban Planning and Development*, 142(2):05015004
66. **Derrible, S.**, & Ahmad, N., 2015 "[Network-Based and Binless Frequency Analyses](#)", *PLoS ONE*, 10(11): e0142108
67. **Derrible, S.**, & Reeder, M., 2015 "[The Cost of Over-Cooling Commercial Buildings in the United States](#)", *Energy and Buildings*, 108:304-306
68. Dijkema, G., Xu, M., **Derrible, S.**, & Lifset, R., 2015, "[Complexity in Industrial Ecology: Models, Analysis, and Actions](#)", *Journal of Industrial Ecology*, 19(2):189-194
69. Ahmad, N. & **Derrible, S.**, 2015 "[Evolution of Water Consumption in the USA: A Network Approach](#)", *Journal of Industrial Ecology*, 19(2):321-330
70. Cottrill, C., & **Derrible, S.**, 2015 "[Leveraging Big Data for the Development of Transport Sustainability Indicators](#)", *Journal of Urban Technology*, 22(1):45-64
71. Peiravian, F. & **Derrible, S.**, Ijaz, F., 2014 "[Development and Application of the Pedestrian Environment Index \(PEI\)](#)", *Journal of Transport Geography*, 39:73-84

72. **Derrible, S.**, 2012 "[Reviewing and Assessing the Toronto Metro System](#)", *Canadian Journal of Civil Engineering*, 39(2):154-162
73. **Derrible, S.**, 2012 "[Network Centrality of Metro Systems](#)", *PLoS ONE*, 7(7):e40575
74. **Derrible, S.** & Kennedy, C., 2011 "[Applications of Graph Theory and Network Science to Transit Network Design](#)", *Transport Reviews: A Transnational Transdisciplinary Journal*, 31(4):495-519
75. **Derrible, S.**, Saneinejad, S., Sugar, L. & Kennedy, C., 2010, "[Macroscopic greenhouse-gases emissions model of urban transportation for municipalities](#)", *Transportation Research Record*, 2191:174-181
76. **Derrible, S.** & Kennedy, C., 2010, "[Evaluating, Comparing, and Improving Metro Networks: an application to the Toronto proposed plans](#)", *Transportation Research Record*, 2146:43-51
77. **Derrible, S.** & Kennedy, C., 2010 "[The Complexity and Robustness of Metro Networks](#)", *Physica A: Statistical Mechanics and its Applications*, 389(17):3678-3691
78. **Derrible, S.** & Kennedy, C., 2010 "[Characterizing Metro Networks: State, Form, and Structure](#)", *Transportation*, 37(2):275-297

79. **Derrible, S.** & Kennedy, C., 2009 "[Network Analysis of Subway Systems in the World using Updated Graph Theory](#)", *Transportation Research Record*, 2112:17-25

books

1. **Derrible, S.**, 2023, *The Infrastructure Book: How Cities Work and Power Our Lives*, first draft complete.
2. **Derrible, S.**, & Chester, M., (Eds) 2020, [Urban Infrastructure: Reflections for 2100](#), Independently published, 211 pages.
3. **Derrible, S.**, 2019, [Urban Engineering for Sustainability](#), MIT Press, Cambridge, MA, 656 pages.
4. Ha-Minh, C., Dao, D.V., Benboudjema, F., **Derrible, S.**, Khoa, H.D.V., Tang, A.M., (Eds) 2019, [CIGOS 2019 Innovation for Sustainable Infrastructure](#), Springer, Singapore, 1254 pages.



5. **Derrible, S.**, 2011 [Metro Network Designs: Characteristics, Complexity, and impact on Ridership](#), Lambert Publishing, Saarbrücken, Germany, 224 pages.



book chapters

6. Lapamonpinyo, P., Ly, H.-B., & **Derrible, S.**, 2022 "[Passenger Train Delay Prediction Using Linear Regression and Ensemble Learning Methods with and Without Ridership and Population Data](#)", in *CIGOS 2021, Emerging Technologies and Applications for Green Infrastructure*, Springer, Singapore, pp.1875-1885
7. Parvaneh, M., Seyrfar, A., Movahedi, A., Ataei, H., Le Nguyen, K., & **Derrible, S.**, 2022 "[Using Machine Learning: A Study on Energy Benchmarking Datasets of Selected Cities Across the United States](#)", in *CIGOS 2021, Emerging Technologies and Applications for Green Infrastructure*, Springer, Singapore, pp.197-205.
8. Truong, T. T. M., & **Derrible, S.** (2021). "Assessing the Wider Economic Impacts of Transport Infrastructure Investment with an Illustrative Application to the North-South High-Speed Railway Project in Viet Nam" in [Frontiers in High-Speed Rail Development](#), edited by Y. Hayashi, W. Rothengatter, & K. E.

- Seetha Ram, Asian Development Bank Institute, Tokyo, Japan, pp.181-194.
9. Kapousouz, E., Seyrfar, A., **Derrible, S.**, & Ataei, H., 2021 "A Clustering Analysis of Energy and Water Consumption in U.S. states from 1985 to 2015" in [Data Science Applied to Sustainability Analysis](#), edited by J. Dunn and P. Balaprakash, Elsevier Science, pp.81-107
 10. **Derrible, S.**, Cheah, L., Arora, M., & Yeow, L.W., 2021 "Urban Metabolism" in [Urban Informatics](#), edited by W. Shi, M.F. Goodchild, M. Batty, M-P Kwan, & A. Zhang, Springer, Singapore, pp.85-114
 11. **Derrible, S.**, 2020 "Peace Day in Saint Pierre and Miquelon – July 14, 2100" in [Urban Infrastructure: Reflections for 2100](#), edited by S. Derrible, & M. Chester, Independently published, pp.73-83
 12. Bozeman III, J., Mulrow, J., **Derrible, S.**, & Theirs, T., 2020 "Urban Carbon Management Strategies" in [Advances in Carbon Management Technologies: Volume 2](#), edited by Sikdar, S.K., & Princiotta, F., CRC Press, Boca Raton, FL, pp.229-250
 13. Badhrudeen, M., Naranjo, N., Movahedi, A., & **Derrible, S.**, 2019 "[Machine learning based tool for identifying errors in CAD to GIS converted data](#)", in [CIGOS 2019 Innovation for Sustainable Infrastructure](#), Springer, Singapore, pp.1185-1190.
 14. Mohareb, E., Bristow, D., & **Derrible, S.**, 2016 "Greenhouse Gas Mitigation in Developed World Cities", in [Handbook of Urbanization and Global Environmental Change](#), edited by Seto, K., Solecki, W., & Griffith, C., Routledge, London (UK), pp.377-405.
 15. **Derrible, S.**, 2013 "[Metros as Biological Systems: Complexity in Small Real-life Networks](#)", in [Advances in Network Complexity](#), edited by Dehmer, M., Mowshowitz, A. & Emmert-Streib, F., Wiley-Blackwell, pp.259-285.
 16. **Derrible, S.**, Saneinejad, S. & Kennedy, C., 2009 "Chapter 4: Transportation and Land-Use", in [Getting to Carbon Neutral: A Guide for Canadian Municipalities](#), edited by Kennedy, C., produced for the Toronto and Region Conservation Authority, Toronto, ON, pp.49-81.
 17. Kennedy, C., Bristow, D., **Derrible, S.**, Mohareb, E., Saneinejad, S., Stupka, R., Sugar, L. & Zizzo, R., 2009 "Chapter 7: Comparison of Strategies", in [Getting to Carbon Neutral: A Guide for Canadian Municipalities](#), edited by Kennedy, C., produced for the Toronto and Region Conservation Authority, Toronto, ON, pp.123-145
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conference proceedings

1. Palani, H., Acosta, J.G., Karatas, A., **Derrible, S.**, 2022 "Understanding the Interrelationship between Energy-Use Behavior and Socio-Demographic Profile", *ITISE 2022* (8th International conference on Time Series and Forecasting), June 27-30, Gran Canaria, Spain
2. Jalloul, H., Choi, J., **Derrible, S.**, & Yesiller, N., 2022 "[Toward Sustainable Management of Disaster Debris: Three-Phase Post-Disaster Data Collection Planning](#)", *Construction Research Congress 2022*, American Society of Civil Engineers, March 7, Arlington, VA, United States
3. Javadinasr, M., Magassy, T.B., Rahimi, E., Mohammadi, M., Davatgari, A., Mohammadian, A., Chauhan, R.S., Conway, M.W., Pendyala, R.M., Salon, D., **Derrible, S.**, Khoeini, S., 2022 "Observed and Expected Impacts of COVID-19 on Travel Behavior in the United States: A Panel Study Analysis", *TRB 101st Annual Meeting*, Transportation Research Board, January 9-13, Washington DC, United States
4. Lapamonpinyo, P., **Derrible, S.**, & Corman, F., 2021 "Passenger Train Delay Modeling with Weather Information using Machine Learning", *8th INSTR International Symposium*

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 9. Peiravian, F., **Derrible, S.**, & 2019, "Manifestation of Coupled Geometric Complexity in Urban Road Networks", *TRB 98th Annual Meeting*, Transportation Research Board, January 13-17, Washington DC, United States
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 14. Golshani, N., Shabanpour, R., Mahmoudifard, S., **Derrible, S.**, & Mohammadian, A., 2017 "Comparison of artificial neural networks and statistical copula-based joint models", *TRB 96th Annual Meeting*, Transportation Research Board, January 8-12, Washington DC, United States
 15. Shabanpour, R., Golshani, N., **Derrible, S.**, Mohammadian, A., & Miralinaghi, M., 2017 "A cluster-based joint model of travel mode and departure time choices", *TRB 96th Annual Meeting*, Transportation Research Board, January 8-12, Washington DC, United States
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20. Peiravian, F., de Lapparent, M. & **Derrible, S.**, 2015 "Transportation Networks, People, and Buildings: Characterization of Urban System Components", *TRB 94th Annual Meeting*, Transportation Research Board, January 11-15, Washington DC, United States
21. Peiravian F., Kermanshah A., **Derrible, S.**, & Andris, C., 2014, "Spatial Data Analysis of Complex Urban Systems", *2014 IEEE International Conference on Big Data*, October 27-30, Washington DC, United States
22. Kermanshah, A., Karduni, A., Peiravian, F., & **Derrible, S.**, 2014 "Impact Analysis of Extreme Events on Flows in Spatial Networks", *2014 IEEE International Conference on Big Data*, October 27-30, Washington DC, United States
23. Peiravian, F. & **Derrible, S.**, 2014 "Complete Streets Designs: A Comparative Emission Impact Analysis", *TRB 93rd Annual Meeting*, Transportation Research Board, January 12-16, Washington DC, United States
24. Cottrill, C. & **Derrible, S.**, 2013 "Leveraging Big Data for the Development of Transport Sustainability Indicators", *World Conference on Transport Research*, July 15-18, Rio de Janeiro, Brazil
25. **Derrible, S.** & Cottrill, C., 2013 "How new Technologies can contribute to measuring Sustainable Mobility", *TRB 92nd Annual Meeting*, Transportation Research Board, January 13-17, Washington DC, United States
26. **Derrible, S.**, 2012 "Using Network Centrality to Determine Key Transfer Stations in Public Transportation Systems", *TRB 91st Annual Meeting*, Transportation Research Board, January 22-26, Washington DC, United States
27. **Derrible, S.**, 2011 "The Toronto Metro: History, Demand, and Performance", *TRB 90th Annual Meeting*, Transportation Research Board, January 23-27, Washington DC, United States
28. **Derrible, S.** & Farooq, B., 2010 "The Four Outcomes of Transit and Land-Use", *CTRF 45th Annual Conference*, Canadian Transportation Research Forum, May 30 – June 02, Toronto, ON, Canada
29. **Derrible, S.** & Kennedy, C., 2010 "Evaluating, Comparing, and Improving Metro Networks: an application to the Toronto plans", *TRB 89th Annual Meeting*, Transportation Research Board, January 10-14, Washington DC, United States
30. **Derrible, S.**, Saneinejad, S., Sugar, L. & Kennedy, C., 2010 "Macroscopic Greenhouse-gases emissions model of urban transportation for municipalities", *TRB 89th Annual Meeting*, Transportation Research Board, January 10-14, Washington DC, United States
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32. **Derrible, S.** & Kennedy, C., 2009 "A Network Analysis of Subway Systems in the World using Updated Graph Theory", *TRB 88th Annual Meeting*, Transportation Research Board, January 11-15, Washington DC, United States
33. **Derrible, S.**, Kennedy, C., Miller, E. & Roorda, M., 2008 "Light Rail Transit in Toronto: Underground or Above-ground". *Proceedings, Annual Conference - Canadian Society for Civil Engineering* 4:2649-2658

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2. **Derrible, S.**, 2016, "[Street smart](#)", *Science*, 354(6310):293-293

3. **Derrible, S.**, 2015, "[Inside the mind of an engineer](#)", *Science*, 349(6247):484-484
4. **Derrible, S.**, 2015 "[Smart Transport Networks: Market Structure, Sustainability and Decision Making](#), T. Vanoutrive, A. Verhetsel (Eds.)", *Journal of Transport Geography*, 44(0):91
5. **Derrible, S.**, 2015, "[Seeing the forest for the trees](#)", *Science*, 347(6229):1426-1426
6. **Derrible, S.**, 2015 "[The New Science of Cities](#), Michael Batty", *Journal of Industrial Ecology*, 19(2):333-334
7. Good, M., & **Derrible, S.**, 2013 "[Book Review: Triumph of the City](#), Edward Glaeser", *Journal of Transport and Land Use*, 6(3):87-89
3. Chauhan, R., & **Derrible, S.**, 2020 "Travel Mode Choice During and After the Pandemic", *Webcast on Initial Results from the COVIDFUTURE Longitudinal Survey Study*, Arizona State University, November 19, Tempe, AZ, United States (online)
4. Haas, N, & **Derrible, S.**, 2020 "Set it and Forget It: Why the Slow Cooker Approach to Engineering Design and Maintenance is Incompatible with Climate Change and Resiliency", *Actionable Science for Urban Sustainability (AScUS) 2020*, June 3-5, Segovia, Spain (online)
5. Movahedi, A, & **Derrible, S.**, 2020 "Identifying spatial patterns and profiles of electricity consumption in Chicago to develop tailored and actionable energy reduction policies", *Actionable Science for Urban Sustainability (AScUS) 2020*, June 3-5, Segovia, Spain (online)
6. **Derrible, S.**, 2019, "Digital Twinning Mobility", *NSF SUS-Smart City Digital Twin Workshop*, Georgia Institute of Technology, September 16, Atlanta, GA, United States
7. **Derrible, S.**, 2019, "Past, Present, and Future Engineering Issues of Canal Systems Through Three Case Studies", *Proceedings of the Planning and developing embankment of Saigon River and an urban river-canal network and solutions to basically embank the Saigon River and the urban river-canal network by year 2025*, September 10, Ho Chi Minh City, Vietnam
8. **Derrible, S.**, Yesiller, N., & Choi, J., 2019 "[Workshop on Post-Disaster Materials and Environmental Management](#)", National Science Foundation, Alexandria, VA, United States
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10. Mulrow, J., Bozeman, J., Pai, S., & **Derrible, S.**, 2019 "All Cars Run on Renewables: Tracing Solar and Manufactured Energy Flow through the Fuel Cycle", *10th International Conference in Industrial Ecology*, International Society for Industrial Ecology, July 7-11, Beijing, China
11. **Derrible, S.**, [Contributor to Research Column of Informs' Decision Analysis Today May 2018](#), 37(1):22-24
12. Nazari F., Mohammadian A., & **Derrible S.**, 2018 "Interactions between Energy/Water consumption and travel decisions in activity-based framework" *15th International Conference on Travel Behavior Research (IATBR)*, July 18, Santa Barbara, CA, United States
13. Deanes, J., Machaj, K., Mulrow, J., & **Derrible, S.**, 2017 "Know Your Carbon Footprint:

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 16. Lee, D., & **Derrible, S.**, 2017 "Comparison of Mode Choice Behavior using Four Types of Artificial Neural Networks", *Transport Chicago 2017*, June 9, Chicago, IL, United States
 17. **Derrible, S.**, 2016, "Leveraging Big Data and Data Mining to Rethink Traditional Sustainability Metrics", *International Congress on Sustainability Science & Engineering (ICOSSE)*, October 25, Suzhou, Jiangsu, China (keynote)
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 19. Ahmad, N., & **Derrible, S.**, 2016 "A Network-Based Approach to Track Social, Economic, and Environmental Trends in World Countries", *ISSST 2016*, International Symposium on Sustainable Systems and Technology, May 16-18, Phoenix, AZ, United States
 20. Ahmad, N., & **Derrible, S.**, 2015 "Analyzing Multivariate Time Series Data using a Network-Based Approach", *Network Frontier Workshop 2015*, December 6-7, Evanston, IL, United States
 21. Kermanshah, A, Ahmad, N., Berkelhammer, M., & **Derrible, S.**, 2015 "Resilience in Complex Systems: A GIS Analysis of Extreme Events Impact on Infrastructure Networks", *8th International Conference in Industrial Ecology*, International Society for Industrial Ecology, July 7-10, Surrey, United Kingdom
 22. Reeder, M., & **Derrible, S.**, 2015 "Estimating Electricity Waste in Commercial Buildings Due to Over-Cooling in the US", *8th International Conference in Industrial Ecology*, International Society for Industrial Ecology, July 7-10, Surrey, United Kingdom
 23. **Derrible, S.**, Ahmad, N., & Theis, T., 2015 "Capturing the Sustainability of Urban Systems using Fisher Information: Application to Public Transport", *8th International Conference in Industrial Ecology*, International Society for Industrial Ecology, July 7-10, Surrey, United Kingdom
 24. Ahmad, N., **Derrible, S.**, & Kermanshah, A., 2015 "Towards Sustainable Development: A Network Approach", *8th International Conference in Industrial Ecology*, International Society for Industrial Ecology, July 7-10, Surrey, United Kingdom
 25. Kermanshah, A., & **Derrible, S.**, 2015 "Using Climate Models to Assess the Resilience of Roads to Extreme Events", *ISSST 2015*, International Symposium on Sustainable Systems and Technology, May 18-20, Dearborn, MI, United States
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33. Peiravian, F., & **Derrible, S.**, 2013 "Adopting a Fractal Approach to study the Complexity of Urban Systems", *7th International Conference in Industrial Ecology*, International Society for Industrial Ecology, June 25-28, Ulsan, South Korea
34. **Derrible, S.** & Mohareb, E., 2013 "Can Jane Jacobs' principles be applied in the developing world for successful and green urban economies", *7th International Conference in Industrial Ecology*, International Society for Industrial Ecology, June 25-28, Ulsan, South Korea
35. Peiravian, F., & **Derrible, S.**, 2013 "Spatial analysis of urban systems: A fractal approach", *Spatial Statistics 2013*, June 4-7, Columbus, OH, United States
36. **Derrible, S.**, Diao, M., Zegras, C., Ferreira, J., Ben-Akiva, M., & Xiang, Y., 2012 "Real Estate Modeling in Singapore", *Future Urban Mobility Symposium 2012*, National University of Singapore, January 11-12, Singapore
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41. **Derrible, S.** & Kennedy, C., 2009 "How does network size affect the energy use of subway systems", *5th International Conference in Industrial Ecology*, International Society for Industrial Ecology, June 21-24, Lisbon, Portugal

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1. **Derrible, S.**, 2022 "Deciphering the relationships that unite urban infrastructure: transport, water, electricity, gas", *LICIT-ECO7: Transport and Traffic Engineering Laboratory Seminar Series*, University Gustave Eiffel, June 10, Lyon, France

2. **Derrible, S.**, 2022 “Interrelationships in Urban Infrastructure: Transport, Water, Electricity, and Gas”, *Environmental and Water Resources Engineering Seminar Series*, University of Nebraska-Lincoln, March 11, Lincoln, NE, United States (online)
3. **Derrible, S.**, 2021 “The Future of Transportation in Illinois: Depopulation, Impacts of COVID-19, and Integration with other Infrastructure Systems”, *Fall Planning Conference*, Illinois Department of Transportation, November 2, Chicago, IL, United States (online)
4. **Derrible, S.**, 2021 “The Future of Urban Infrastructure: Water, Wastewater, Transport, Electricity, Gas, Solid Waste, and Telecommunications”, *Weston Roundtable Series*, University of Wisconsin at Madison, October 7, Madison, WI, United States
5. **Derrible, S.**, 2021 “A Primer to Sustainable Urban Infrastructure”, *Urban Infrastructure Hackathon*, University of Rochester, March 20, Rochester, NY, United States (online)
6. **Derrible, S.**, 2021 “How Cities Work: A Behind-the-Scenes Look at Cities of Today and Tomorrow”, *UIC Alumni Exchange*, University of Illinois at Chicago, February 24, Chicago, IL, United States (online)
7. **Derrible, S.**, 2020 “Seeing Cities through the Lens of Urban Engineering”, *Centre for Advanced Spatial Analysis (CASA) Seminar Series*, University College London, November 25, London, United Kingdom (online; [video recording](#))
8. **Derrible, S.**, 2020 “Changes in activity-mobility patterns of US residents in response to COVID-10”, *AEESP Converging COVID-19, Environment, Health, & Equity Conference*, University of South Florida, November 20, Tampa, FL, United States (online)
9. **Derrible, S.**, 2020 “The difference between ‘good’ and ‘bad’ smart urban infrastructure”, *Braun Symposium: Working across the UI System to Achieve Sustainability*, University of Illinois at Chicago, October 30, Chicago, IL, United States (online)
10. **Derrible, S.**, 2020, “The Rise of Urban Engineering for Smart, Sustainable, Resilient Urban Infrastructure”, *Smart Public Transport Lab Webinar*, TU Delft, May 6, Delft, Netherlands (online)
11. **Derrible, S.**, 2020, “Infrastructures Urbaines : Intelligence et Interdépendances”, *Séminaire CoDiUM*, Institut de Recherche en Sciences et Techniques de la Ville, April 9, Nantes, France (online)
12. **Derrible, S.**, 2019, “Using Machine Learning to Study Infrastructure Interdependencies and Urban Engineering Systems”, *Energy and Environment Research Seminar*, City University of Hong Kong, November 8, Hong Kong
13. **Derrible, S.**, 2019, “Applications of Machine Learning to Inform Policy-Making for Urban Sustainability”, *Asian and Policy Studies Seminar*, Education University of Hong Kong, November 8, Hong Kong
14. **Derrible, S.**, 2019, “Advances in Urban Engineering: Machine Learning, Infrastructure Interdependencies, Design Processes”, *Engineering Systems & Design Seminar Research Seminar*, Singapore University of Technology and Design, September 25, Singapore
15. **Derrible, S.**, 2019, “Past, Present, and Future Engineering Issues of Canal Systems Through Three Case Studies”, *Planning and developing embankment of Saigon River and an urban river-canal network and solutions to basically embank the Saigon River and the urban river-canal network by year 2025*, September 10, Ho Chi Minh City, Vietnam (keynote)
16. **Derrible, S.**, 2019, “Power of Machine Learning and AI for Planning Cities”, *Academic Seminar*, CoderSchool, August 22, Ho Chi Minh City, Vietnam
17. **Derrible, S.**, 2019, “Engineering Issues of Canal Systems”, *Ideas and Solutions for Developing Canalside Spaces in Ho Chi Minh City*, University of Architecture, August 22, Ho Chi Minh City, Vietnam
18. **Derrible, S.**, 2019, “Machine Learning for Civil Engineers”, *Science Presentation on Civil*

- Engineering*, University of Transport Technology, July 24, Hanoi, Vietnam
19. **Derrible, S.**, 2019, "Smart Data Management and Operations of Urban Infrastructure using Geographic Information Systems", *International Conference on Smart Cities*, July 18, Seoul, Korea (keynote)
20. **Derrible, S.**, 2019, "Engineering Smart and Integrated Cities", *Department of Civil Engineering Annual Seminar and Retreat*, University of Transport Technology, July 3, Halong Bay, Vietnam
21. **Derrible, S.**, 2019, "Designing Smart Cities Intelligently in a Technology-Addicted Era", *Issues of Urban Reinvention Panel Discussion*, Illinois Institute of Technology, June 5, Chicago, IL, United States
22. **Derrible, S.**, 2019, "Defining Urban Engineering to Help Design Sustainable and Resilient Cities", *Civil, Environmental, and Sustainable Engineering Seminar Series*, Arizona State University, April 8, Tempe, AZ, United States
23. **Derrible, S.**, 2018, "Shaping Future Cities to be Smart, Sustainable, and Resilient", *3rd International Graduate Student Symposium of the PhD Program at IIT College of Architecture*, Illinois Institute of Technology, November 17, Chicago, IL, United States (keynote)
24. **Derrible, S.**, 2018, "Urban Data Mining to Understand Urban Metabolism", *iSEE Congress 2018*, University of Illinois at Urbana-Champaign, October 4, Urbana, IL, United States
25. **Derrible, S.**, 2018, "Leveraging Machine Learning to Integrate and Decentralize Urban Infrastructure", *Sustainable and Resilient Infrastructure Seminar Series*, University of Illinois at Urbana-Champaign, October 3, Urbana, IL, United States
26. **Derrible, S.**, 2018, "Using Network Frequency Analysis to Detect Trends and Cluster World Countries to Track Sustainable Development", *International Society for Industrial Ecology (ISIE) Gordon Research Conference (GRC)*, May 23, Les Diablerets, Switzerland
27. **Derrible, S.**, 2018, "The Power of Planning Cities", TEDx Walter Payton College Prep, April 12, Chicago, IL, United States
28. **Derrible, S.**, 2018, "What is machine learning and how can we use it to better understand urban consumption patterns?", *Golisano Institute for Sustainability Seminar Series*, Rochester Institute of Technology, April 18, Rochester, NY, United States
29. **Derrible, S.**, 2017, "Using Machine Learning to Capture Non-Linear Properties in Residential Consumption: A Case for Water, Transport, and Electricity", *Ecological Systems Design Seminar Series*, ETH Zurich, December 19, Zurich, Switzerland
30. **Derrible, S.**, 2017, "Using Data Science to Capture New Insights into Energy and Resource Consumption", *Environmental Engineering Seminar Series*, University of Wisconsin Madison, December 4, Madison, WI, United States
31. **Derrible, S.**, 2017, "Leveraging Data Science to Learn New Things about Old Systems", *Industrial Engineering Seminar Series*, Purdue University, November 29, West Lafayette, IN, United States
32. **Derrible, S.**, 2017, "Integrating Urban Infrastructure Systems for the Design of Smart, Sustainable, and Resilient Cities", *Civil Engineering Seminar Series*, University of Pittsburgh, October 20, Pittsburgh, PA, United States
33. **Derrible, S.**, 2017, "Système d'agriculture urbaine et de symbiose industrielle Plant Chicago", Séminaire de clôture du projet P-G&City, CIRAD Lavalette, September 29, Montpellier, France
34. **Derrible, S.**, 2017, "Leveraging Data Science to Uncover Patterns in Energy and Resource Consumption", *Engineering Systems & Design Seminar Series*, Singapore University of Technology and Design, May 19, Singapore
35. **Derrible, S.**, 2017, "The Role of Data Science for the Design of Sustainable and Resilient Urban Infrastructure", *Future of Urban Mobility Seminar*, Singapore-MIT Alliance for Research and Technology, May 18, Singapore

36. **Derrible, S.**, 2017, "The Role of Computer Science in Redesigning Civil Infrastructure Systems", *Computer Science Seminar Series*, March 6, Chicago, IL, United States
37. **Derrible, S.**, 2017, "Redefining Urban Infrastructure Planning and Design: Moving towards Integration", *Workshop on Urban Mobility in the Era of Smart and Connected Communities*, February 10, Chicago, IL, United States
38. **Derrible, S.**, 2016, "Machine Learning for non-Computer Scientists", *United States Gypsum Tek Talk*, October 5, Libertyville, IL, United States
39. **Derrible, S.**, 2016, "Critically Interdependent by Design: Re-Thinking Infrastructure Planning", *Modern Solutions Power Systems Conference (MSPSC)*, June 9, Chicago, IL, United States
40. **Derrible, S.**, 2016, "Linking urban infrastructure systems: Future smart cities", *Workshop on Computational Challenges in Cooperative Intelligent Urban Transport*, Schloss Dagstuhl, March 2, Wadern, Germany
41. **Derrible, S.**, 2016 "Re-Engineering Cities: The Role of Complexity Science", *Wednesdays @ NICO Seminar*, Northwestern Institute on Complex Systems, Northwestern University, Evanston, IL, United States
42. **Derrible, S.**, 2015 "Complexity in Future Cities: The Rise of Networked Infrastructure", *Future Cities Workshop*, University of Seoul, November 20, Seoul, South Korea
43. **Derrible, S.**, 2015 "Complexity as a Lever of Creativity for Sustainable Infrastructure Design", *Research Design in Urban Science Course*, University of Washington, October 20, Seattle, WA, United States
44. **Derrible, S.**, 2015 "Resilience is not a Tree: Can Christopher Alexander help us design more resilient systems?", *22nd ISSST*, International Symposium on Sustainable Systems and Technology, May 19, Dearborn, MI, United States
45. **Derrible, S.**, 2015, "Using Complexity Theory to Gain New Information and Help Design More Sustainable and Resilient Urban Systems", *Lectures in Civil and Environmental Engineering*, Northwestern University, March 13, Evanston, IL, United States
46. **Derrible, S.**, 2014, "Difference between "Sustainability" and "Resilience"?", *Symposium on Sustainable Engineering*, University of Illinois at Chicago, December 2, Chicago, IL, United States
47. **Derrible, S.**, 2014 "Water and Sustainability", *Urban Systems and Networks Satellite, NetSci 2014 International School and Conference on Network Science*, June 2, Berkeley, California
48. **Derrible, S.**, 2014 "Water, Networks, Complexity, and Cities: Extracting New Information from Old Systems", *CME Environmental Seminar*, University of Illinois at Chicago, April 17, Chicago, IL, United States
49. Zenil, H. & **Derrible, S.**, 2014 "World Metro Networks", Wolfram Demonstrations Project, <http://demonstrations.wolfram.com/WorldMetroNetworks/>, Accessed January 29, 2014
50. **Derrible, S.**, 2014 "Harvesting Complexity to Build Smarter Cities", *Northwestern University Transportation Center Seminar*, Northwestern University, January 9, Evanston, IL, United States
51. **Derrible, S.**, 2013 "Fractals, power laws, and networks: how complexity can help better plan cities", *Department of Urban Planning and Policy's Friday Forums*, University of Illinois at Chicago, November 15, Chicago, IL, United States
52. **Derrible, S.**, 2013 "What metros have to teach us, from complexity to centrality", *Networking Transportation Networkers*, Coventry University, September 26, Coventry, United Kingdom
53. **Derrible, S.**, 2013 "Urban Planning, Resilience and Sustainability from the perspective of Complex Systems", *Metropolitan Planning Council*, July 15, Chicago, IL, United States

54. **Derrible, S.**, 2013 "Resilience Planning: Concepts and Applications to Urban Issues", *Metropolitan Planning Council*, May 15, Chicago, IL, United States
55. **Derrible, S.**, 2013 "Redesigning Urban Infrastructure Networks for a Smarter Future", *Smart Cities Seminar*, University of California Berkeley, February 1, Berkeley, CA, United States
56. **Derrible, S.**, 2012 "Rethinking Transit Planning: Lessons from Complex Networks", *CTS IGERT Seminar Series*, University of Illinois at Chicago, October 10, Chicago, IL, United States
57. **Derrible, S.**, 2012 "Redesigning Urban Systems: A Network Approach", *Urban Engineering Seminar*, Imperial College London, March 30, London, United Kingdom
58. **Derrible, S.**, 2012 "Adopting a Complex Network approach to better understand and design Urban Infrastructure", *Sustainable Infrastructure Systems Seminar*, University of Illinois at Chicago, March 16, Chicago, IL, United States
59. **Derrible, S.**, 2012 "Transit systems: new perspectives and novel methods, a network topological approach", *MIT Transit Research Group Meeting*, Massachusetts Institute of Technology, February 10, Boston, MA., United States
60. **Derrible, S.**, 2012 "Overview of the Singaporean Transit System", *Rail Transit Systems Committee Meeting, TRB 91st Annual Meeting*, Transportation Research Board, January 23, Washington DC, United States
61. **Derrible, S.**, 2011 "Transit Network Designs: Thoughts for the Future of Urban Mobility", *Future of Urban Mobility Seminar*, Singapore-MIT Alliance for Research and Technology, September 6, Singapore
62. **Derrible, S.**, 2011 "Research Activities on Infrastructure Networks: Past, Present, and Future", *Infrastructure Systems Seminar*, Georgia Institute of Technology, April 18, Atlanta, GA, United States
63. **Derrible, S.**, 2011 "Urban Infrastructure Networks: past research and future avenues", *Construction Engineering and Management Seminar*, Columbia University, March 24, New York City, NY, United States
64. **Derrible, S.**, 2010 "Mobility Cultures in Paris and Toronto", *Mobility Cultures in Megacities Kick-off Workshop*, Institute for Mobility Research, November 17-19, Munich, Germany
65. **Derrible, S.**, 2010 "Properties and Effects of Metro Network Design", *Sustainable Infrastructure Group Research Discussion Day*, University of Toronto, May 27, Toronto, Ontario, Canada
66. **Derrible, S.**, Saneinejad, S., Sugar, L. & Kennedy, C., 2010 "Calculating transportation GHG emissions for municipalities", *Transportation Systems (ITS) Lab Seminar Series*, University of Toronto, March 5, Toronto, Ontario, Canada
67. **Derrible, S.**, 2009 "Unraveling the mysteries of the complexity of metro networks", *Transportation Systems (ITS) Lab Seminar Series*, University of Toronto, November 6, Toronto, Ontario, Canada
68. **Derrible, S.** & Kennedy, C., 2009 "Energy Use of Subway Networks in the Sustainability era", *CORS-INFORMS 2009 International Meeting*, Canadian Operational Research Society, June 14-17, Toronto, Ontario, Canada
69. **Derrible, S.**, 2009 "Public Transit Network Characteristics and Design: results and lessons learnt", *First Annual Joint ITE section Student Presentation Competition Job Fair*, Canadian Institute of Transportation Engineers Toronto, Hamilton, Southwest Ontario, University of Waterloo, March 4, Waterloo, Ontario, Canada
70. **Derrible, S.**, 2009 "Using Graph Theory to Analyse Subway Networks: What can we learn?", *Transportation Systems (ITS) Lab Seminar Series*, University of Toronto, February 27, Toronto, Ontario, Canada

press

1. The Conversation, 2021, "[Time for the UK to say goodbye to drive-throughs: for the sake of our environment, our health – and](#)

- [our culture](#)” by Eugene Mohareb and **Sybil Derrible** (February 14)
2. The Conversation, 2021, “[Smashed cars, burnt trees, soggy insulation: Post-disaster cleanup is expensive, time-consuming and wasteful](#)” by **Sybil Derrible**, Nazli Yesiller, and Juyeong Choi (December 11), updated and republished from 2019 article
 3. The Conversation, 2021, “[Tornades aux États-Unis : le casse-tête du nettoyage post-catastrophe](#)” by **Sybil Derrible**, Nazli Yesiller, and Juyeong Choi (December 13), translated from December 11, 2021 article
 4. The Center Square, 2021, “[Pandemic transportation habits could linger in Illinois, across nation](#)” by Scot Bertram (June 5)
 5. The Conversation, 2019, “[Millions of burnt trees and rusted cars: Post-disaster cleanup is expensive, time-consuming and wasteful](#)” by **Sybil Derrible**, Nazli Yesiller, and Juyeong Choi (December 10)
 6. CME News, 2019, “[Professor Sybil Derrible leads workshop on post disaster cleanup](#)” by David Staudacher (July 24)
 7. UIC News, 2019 “[Making city infrastructure more resilient](#)” by Sharon Parmet (January 10)
 8. CME Alumni Newsletter - Spring 2018, 2018, “[Professor Derrible Featured at TEDx Talk](#)” by David Staudacher (July 24)
 9. UIC News, 2017, “[Campus Conversation tackles complexity of climate change](#)” by Hoda Fakhari (November 9)
 10. De Volkskrant, 2017, “[Er hoeft maar dát te gebeuren en het hele metronet ligt stil](#)”, by Francien Bossema (June 28)
 11. CME Alumni Newsletter - Spring 2016, 2016, “[Derrible Researching the Development of Sustainable Communities](#)” by David Staudacher (April 25)
 12. SPM 1ère, 2016, “[Journal: Edition du Matin](#)” by Patrick Caillet (April 21)
 13. UIC News, 2016, “[Engineering faculty members receive NSF CAREER Awards](#)” by Bill Burton (March 29)
 14. UIC News, 2015, “[Re-thinking design to build sustainable cities](#)” by Gary Wisby (June 16)
 15. SPM 1ère, 2013 “[Ça vous regarde est à Chicago](#)” by Claire Arrossaména (November 28)
 16. GlobalEd 2, 2013 [Podcast on “Infrastructure, Sustainability, and Water Management”](#) by Jeremy Riel (October 17)
 17. Metropolitan Planning Council, 2013 “[Tough Stuff: Resilient Infrastructure in a Changing World](#)” by MPC (May 15). Find video [here](#)
 18. Institute for Environmental Science and Policy, 2012 [Fall 2012 Newsletter](#) by IESP
 19. txchnologist, 2011 “[The Lonely Podcar: Who Will Take a Chance on Personal Transit?](#)” by Christopher Mims
 20. planningpool, 2010 “[CTRF 2010: Linking land use and transit](#)” by Christine Allum

04 editorial and reviewing activities

editor

- [Scientific Reports](#) (Nature) – Editorial Board Member (2022 – pres)
- [Urban Findings](#) (Findings Press) – Editorial Advisory Board (2021 – pres)
- [Cleaner Production Letters](#) (Elsevier) – Associate Editor (2020 – pres)
- [Journal of Infrastructure Systems](#) (ASCE) – Associate Editor (2018 – pres)
- [Transportmetrica B: Transport Dynamics](#) (Taylor and Francis) – Guest Editor on Special Issue (2022): “Reliability and Resilience of Emerging Mobility Systems”
- [Journal of Industrial Ecology](#) (Wiley) – Guest Editor on Special Issue (2018): “Industrial Ecology for Climate Change Adaptation and Resilience”
- [Complex Systems](#) – Editorial Board Member (2017 – pres)
- [Journal of Urban Planning and Development](#) (ASCE) – Editorial Board Member (2015 – pres)

- [Sustainable and Resilient Infrastructure](#) (Taylor and Francis) – Editorial Board Member (2015 – 2019)
- [Journal of Infrastructure Systems](#) (ASCE) – Guest Editor on Special Issue (2016): “Infrastructure Resilience to Climate Change”
- [Journal of Industrial Ecology](#) (Wiley) – Guest Editor on Special Issue (2015): “Advances in Complex Adaptive Systems and Industrial Ecology”

proposal and project reviewer

- American Association for the Advancement of Science (AAAS) (1)
- Engineering and Physical Sciences Research Council (EPSRC) (UK) (1)
- Discovery Partners Institute (1)
- ETH Zurich Research Commission (2)
- German Israeli Foundation for Scientific Research and Development (1)
- Illinois Water Resources Center (1)
- Israel Science Foundation (1)
- Mid-Atlantic Transportation Sustainability University Transportation Center (1)

- National Cooperative Highway Research Program (NCHRP) (1)
- Natural Sciences and Engineering Research Council of Canada (NSERC-CRSNG) Discovery Grant (1)
- Netherlands Organisation for Scientific Research (1)
- Transit Cooperative Research Program (TCRP) (1)
- Sloan Foundation (1)
- UCLA Institute of Transportation Studies (1)
- University of Illinois at Chicago (1)
- U.S. Department of Energy (1)
- U.S. National Science Foundation (11)
- Vienna Science and Technology Fund (1)

international reports

- *Resource Requirements of Future Urbanization* (2017) by the International Resource Panel (IRP) – part of the United Nations Environment Program (UNEP)

book and book proposal reviewer

- Columbia University Press (1)
- CRC Press (2)

- MIT Press (3)
- Pearson (1)
- Routledge (1)
- Wiley (1)

journal reviewer

- ACM CHI Conference on Human Factors in Computing Systems (1)
- ASCE Construction Research Congress (1)
- ASCE Journal of Infrastructure Systems (10)
- ASCE Journal of Transportation Engineering (2)
- ASCE Journal of Urban Planning and Development (19)
- Buildings (1)
- Canadian Transportation Research Forum (1)
- Cleaner Production Letters (1)
- Climatic Change (2)
- Complex Systems (1)
- Energy and Buildings (2)
- Environment and Planning B: Urban Analytics and City Science (6)
- Environmental Sciences (1)
- International Conference on Smart Cities (4)

- International Conference series on Geotechnics, Civil Engineering and Structures (CIGOS) (33)
- International Journal of Sustainable Transportation (3)
- International Journal of Urban Sciences (2)
- International Society for Industrial Ecology Biennale Conference (33)
- International Symposium on Transportation Network Reliability (5)
- Journal of Hydrology (1)
- Journal of Industrial Ecology (8)
- Journal of Planning Education and Research (2)
- Journal of Structural Integrity and Maintenance (2)
- Journal of the Royal Society Interface (2)
- Journal of Transport and Land-Use (3)
- Journal of Transport Geography (9)
- Journal of Urban Technology (2)
- Nature Sustainability (4)
- Nature Urban Sustainability (2)
- Networks and Spatial Economics (3)
- Physica A: Journal of Statistical Mechanics and its Applications (8)
- PLoS ONE (2)

- Reliability Engineering and System Safety (4)
- Renewable & Sustainable Energy Reviews (2)
- Resources, Conservation & Recycling (2)
- Risk Analysis (1)
- Royal Society Open Science (1)
- Scientific Data (2)
- Springer Handbook Chapter (1)
- SpringerPlus (1)
- Structure and Infrastructure Engineering (1)
- Sustainable and Resilient Infrastructure (1)
- The Professional Geographer (1)
- Transactions on Internet Technology (1)
- Transport Findings (2)
- Transport Policy (6)
- Transport Reviews (2)
- Transportation (4)
- Transportation Letters (2)
- Transportation Research Board Annual Meeting (85)
- Transportation Research Part A: Policy and Practice (1)
- Transportation Research Part C: Emerging Technologies (2)
- Transportation Research Part D: Transport and Environment (3)

- Transportation Research Part E: Logistics and Transportation Review (1)
- Transportation Science (1)
- Transportmetrica B (1)
- Urban Findings (1)
- Urban Studies (2)

05 research projects

current projects

university of Illinois at Chicago

A twitter data downloading framework for geographical analysis and sustainability research may 2022 - pres

Objective: Develop a high-level tool to download geographically referenced Twitter data from user-defined parameters and compute basic preliminary text and statistical analyses.

Impact of stormwater management practices on detention network performance aug 2021 - pres

Objective: Evaluate stormwater detention network performance based on detention design assumptions in various storm events.

Investigating Attitudinal and Behavioral Changes in US Households Before, During, and After the COVID-19 Pandemic may 2020 - pres

Objective: Develop, deploy, and analyze a household travel survey to capture attitudinal and behavioral changes in US households with the COVID-19 pandemic. All data collected is anonymized and shared in open access.

Depopulation in Illinois: Understanding and Forecasting Impacts on Transportation may 2019 - pres

Objective: Analyze current depopulation trends in places around the state of Illinois, forecast

the potential impacts, and identify transportation solutions.

Green StormWater Infrastructure Modeling (G-SWIM) aug 2016 - aug 2020

Objective: Scaled analysis of green stormwater infrastructure from site monitoring investigations to regional impact modeling.

past projects

university of Illinois at Chicago

Train Delay Prediction Modeling aug 2018 - jul 2022

Objective: Build database of Amtrak train arrival times and other variables (e.g., weather) and use Machine Learning (ML) to model train delay prediction.

Investigate Interdependencies and Interrelationships in Urban Infrastructure aug 2016 - jul 2016

Objective: Identify and study the presence of interdependencies in how infrastructure operates and interrelationships in how people use infrastructure services.

Converting Infrastructure Maps from CAD to GIS aug 2017 - dec 2021

Objective: Develop protocols and machine learning models to accurately convert infrastructure maps from CAD to GIS format.

The Affluence-Technology Connection aug 2016 - dec 2019

Objective: Explore the Affluence-Technology connection (from the IPAT equation) through the development of new metrics that reveal how technological attributes and consumption affluence influence and relate to each other.s

Machine-based Statistical Learning of Urban Metabolism aug 2015 - dec 2019

Objective: Design high-performance machine-based statistical learning models that can be applied in the context of urban metabolism.

Stormwater Runoff of Argyle Street: Pre and Post Green Infrastructure aug 2017 - aug 2019

Objective: Model pre and post stormwater runoff management scenario of existing green infrastructure in Argyle Street in Chicago using EPA SWMM.

Sentiment Analysis of Tweets Related to Civil Infrastructure across US Cities aug 2018 - aug 2019

Objective: Collect tweets with specific keywords related to civil infrastructure for a list of cities across the US and analyze their sentiment using Natural Language Processing (NLP) and QGIS

Value Engineering Cities jan 2017 - jul 2018

Objective: Develop an assessment method to evaluate the value of cities based on their infrastructure.

Modeling the Impact of Climate Change on Stormwater Infrastructure: Application to Elmhurst, IL dec 2017 - mar 2018

Objective: Simulate the impact of Climate change on existing stormwater infrastructure by using the climate model output and XPSWMM.

Tracking Resource Consumption Trends using Network Theory **aug 2014 – aug 2018**

Objective: Create, develop and apply a new fundamental network theoretical methodology to track trends in resource consumption in the world.

Measuring the Resilience of Urban Transportation Networks to Extreme Events

aug 2013 – may 2017

Objective: Simulate and measure the impact of extreme events on urban transportation systems by using climate model outputs and concepts of networks science.

Urban Infrastructure is not a Tree: Integrating and Decentralizing Urban Infrastructure Networks

aug 2015 – may 2016

Objective: Adapt Christopher Alexander's *A City is not a Tree* concept to urban infrastructure and determine how urban infrastructure networks can be better integrated and decentralized for smarter cities.

GIS to Network Tool Development

jan 2015 – aug 2016

Objective: Develop an ArcGIS, python, and QGIS tool to convert any GIS polyline feature into a network format.

Facility-Scale Industrial Symbiosis

jan 2015 – may 2016

Objective: Define a novel approach to co-locating small production businesses within a single facility, based on established industrial symbiosis and circular economy principles.

Estimating The Cost of Over-Cooling Commercial Buildings in the United States

aug 2014 – aug 2015

Objective: Compare building electricity use data with simulated data (using DOE's eQuest) to estimate the energy and monetary cost of over-cooling commercial buildings.

Water Consumption Networks in the United States

aug 2013 – jul 2014

Objective: Use a network science methodology to study how water consumption has evolved in the United States.

Geometric Complexity of Urban Road Networks

aug 2012 – dec 2014

Objective: Develop novel methodologies to study and characterize the complex geometry of urban road networks, which can in turn lead to a better understanding of their encompassing urban systems.

singapore-mit alliance for research and technology

SimMobility: Long-Term and Performance Assessment

aug 2011 – jul 2012

Objective: Develop state-of-the-art integrated transportation and land-use platform, using advanced discrete choice behavioral models. Enable more meaningful evaluation of

alternative sustainability mobility systems for the future of urban mobility.

university of toronto

Greenhouse-Gas Urban Freight Transportation Model **nov – dec 2010**

Objective: Develop estimation guidelines to evaluate the municipal greenhouse-gas emissions related to the transportation of freight. Work to be included in the *Carbon Neutral City Planner* software.

Waterfront Toronto Climate Positive Tool Development **aug – oct 2010**

Objective: Assist in the development of the Climate Positive (CP) Tool, in particular, the development of a Toronto-specific model to compute transportation-related inputs to the tool that are sensitive to Waterfront Toronto neighborhood design (dwelling typology, street layout, etc.). Review of the CP Tool and strategic analysis of application for lower don lands.

Getting to Carbon Neutral: A Guide to Canadian Municipalities

sep 2008 – jan 2010

Objective: Synthesize current knowledge of sustainable urban design, and present it in a way that can help Canadian municipalities to become carbon neutral. The definition of carbon neutrality in this document implies direct / indirect municipal emissions minus sequestered carbon and offsets sum to zero.

Urban and Regional Macro-Economics

sep 2006 – sep 2008

Objective: Develop macro-economic measures to compare worldwide cities, investigating the role of savings, capital formation and imports/exports.

06 grants, scholarships, fellowships, and awards

grants

university of illinois at chicago

PRESUR: Planning a Resilient and Equitable State Using Real-time data

Co-PI \$125,000
Sponsor: Discovery Partners Institute (DPI)

RAPID/Collaborative Research: Investigating Attitudinal and Behavioral Changes in US Households Before, During, and After the COVID-19 Pandemic

Lead PI \$110,351
Sponsor: National Science Foundation (NSF)

INTERN: Integrating Real-time Water Data, Automation, and Machine Learning into Water Management Operations and Planning

Lead PI \$38,444
Sponsor: National Science Foundation (NSF)

EAGER: Sustainable Material Management Extreme Events Reconnaissance (SUMMEER) Organization

Co-PI \$299,999
Sponsor: National Science Foundation (NSF)

Smart City Digital Twin Convergence Conference

Co-PI \$49,213
Sponsor: National Science Foundation (NSF)

Understanding and Forecasting the Impacts of Depopulation in Illinois

Sole PI \$276,572
Sponsor: Illinois Department of Transportation

Workshop on Post-Disaster Materials and Environmental Management

Lead PI \$49,946
Sponsor: National Science Foundation (NSF)

Intelligent Welding: Real Time Monitoring, Diagnosis, Decision and Control using Multi-sensor and Machine Learning

Co-PI \$501,554
Sponsor: UI Labs

CyberPhysical Systems: Synergy: Collaborative Research: Mapping and Querying Underground Infrastructure Systems

Co-PI \$420,000
Sponsor: National Science Foundation (NSF)

CAREER: Understanding the Fundamental Principles Driving Household Energy and Resource Consumption for Smart, Sustainable, and Resilient Communities

Sole PI \$500,000
Sponsor: National Science Foundation (NSF)

Transportation Systems Modeling for Detroit

Sole PI \$40,907
Sponsor: Argonne National Laboratory

CyberSEES: Type 2: Feasibility of a Data Integration Framework for Urban Metabolism

Co-PI \$616,000
Sponsor: National Science Foundation (NSF)

Developing a new GIS tool to calculate the Topological and Fractal Dimensions of Cities

Sole PI \$9,935
Sponsor: College of Engineering Annual Fund

Assessing Sustainable Freight Policies Using Microsimulation Approach

Co-PI \$78,998
Sponsor: National Center for Freight & Infrastructure Research (CFIRE)

university of toronto

Greenhouse-Gas Emissions of Commercial Vehicles in Municipalities: adding Freight Transportation to MUNTAG

Co-PI
Sponsor: Toronto and Region Conservation Authority

Climate Positive Tool Development

Co-PI
Sponsor: Clinton Climate Initiative and Waterfront Toronto

Getting to Carbon Neutral

Co-PI
Sponsor: Toronto and Region Conservation Authority

fellowships, scholarships and awards

COE Advising Award 2021

Source: University of Illinois at Chicago
Based on advising evaluations

Finalist in Textbooks – 2020 PROSE Award for Urban Engineering for Sustainability 2020

Source: Association of American Publishers (AAP)

Textbook *Urban Engineering for Sustainability* recognized as one of “12 Must-Read Earth Day Books” in 2020 2020

Source: MIT Press – see [article here](#)

COE Teaching Award 2019

Source: University of Illinois at Chicago
Based on teaching evaluations

COE Research Award 2017

Source: University of Illinois at Chicago
Based on merit

COE Teaching Award 2017

Source: University of Illinois at Chicago
Based on teaching evaluations

NSF CAREER Award 2016

Source: National Science Foundation

COE Advising Award 2016

Source: University of Illinois at Chicago
Based on advising evaluations

COE Teaching Award 2014

Source: University of Illinois at Chicago

Based on teaching evaluations

COE Advising Award 2014

Source: University of Illinois at Chicago
Based on advising evaluations

Natural Sciences and Engineering Research Council of Canada (NSERC-CRSNG) 2011

Post-Doctoral Fellowship
Funding for two years – national competition

CN Railway Scholarship 2009

Canadian Transportation Research Forum
Six scholarships per year – national competition

MMM Group Ltd. Scholarship 2009

Transportation Association of Canada
Eighteen scholarships per year – national competition

ISIE Conference Student Scholarship 2009

International Society for Industrial Ecology
For the 2009 ISIE conference in Lisbon, Portugal

ITE Student Presentation Competition 2009

ITE chapters of Toronto, Hamilton and Southwest Ontario
Silver award

Open Fellowship 2006–2010

University of Toronto
Renewed annually based on maintaining a GPA of at least A

Design, Make and Test Best Project-of-the-Year Award 2005

Imperial College London

This is a one-year long project mandatory to all third-year students

Open Scholarship 2001–2010

Conseil Territorial of St Pierre and Miquelon
Renewed annually based on success and recommendation

Topic: Machine-based Statistical Learning of Urban Metabolism

Ahmad, Sk Nasir **aug 2014 – aug 2018**
Ph.D. Candidate
Civil Engineering
University of Illinois at Chicago
Topic: Tracking Energy and Resource Consumption for Sustainable Development

Kermanshah, Amir **aug 2013 – may 2017**
Ph.D. Candidate
Civil Engineering
University of Illinois at Chicago
Topic: A Geographic Analysis of the Resilience of Urban Infrastructure Networks to Extreme Events

Peiravian, Farid **sep 2012 – dec 2014**
Ph.D. Candidate
Civil Engineering
University of Illinois at Chicago
Topic: Geometric Complexity of Urban Road Networks

master advising

Tiwari, Ranjita **aug 2016 – aug 2018**
M.S. Candidate
Civil Engineering
University of Illinois at Chicago
Topic: Measuring and Modeling the Performance of Green Infrastructure

Maciver, Scot **aug 2016 – jul 2018**
M.S. Candidate
Civil Engineering

University of Illinois at Chicago
Topic: Value Engineering Cities

Delpazir, Dena **jan 2017 – mar 2018**
M.S. Candidate
Civil Engineering
University of Illinois at Chicago
Topic: Modeling Large-Scale Urban Stormwater Runoff

Eva Chancé **apr 2016 – sep 2016**
M.S. Intern
AgroSup Dijon (France)
French National Agriculture Institute (INRA)
Topic: Industrial Symbiosis of Plant Chicago

Mulrow, John **aug 2014 – may 2016**
M.S. Candidate
Civil Engineering
University of Illinois at Chicago
Topic: Facility-Scale Industrial Symbiosis Integrating Small-Scale Production and the Circular Economy

Ahmad, Sk Nasir **aug 2013 – aug 2014**
M.S. Candidate
Civil Engineering
University of Illinois at Chicago
Topic: Evolution of Water Consumption in the USA: A Network Approach

Bulusu, SrimaniTejaswini **sep 2012 – may 2013**
M.S. Candidate
Civil Engineering
University of Illinois at Chicago
Topic: Carbon Footprint

Xiang, Yunke **oct 2011 – jul 2012**
Master of City Planning candidate
Department of Urban Studies and Planning
Massachusetts Institute of Technology
Topic: Real Estate Modeling in Singapore

undergraduate advising

Acaylar, Gieanelli **may 2021 – pres**
Undergraduate Research Student
Civil Engineering
University of Illinois at Chicago
Topic: COVID19 Survey and Analysis

Doak, Laurel **may 2021 – aug 2021**
Undergraduate Research Student
Computer Science
University of Illinois at Chicago
Topic: Visualization of COVID10 Data

Naranjo, Nalin **jan 2019 – aug 2020**
Undergraduate Research Student
Civil Engineering
University of Illinois at Chicago
Topic: GIS and Underground Infrastructure

Quadros, Royce **may 2019 – aug 2019**
Undergraduate Research Student
Civil Engineering
University of Illinois at Chicago
Topic: Green Infrastructure Maintenance

Miguest, Jacob **jul 2018 – may 2019**
Undergraduate Research Student
Civil Engineering
University of Illinois at Chicago
Topic: 3D Modeling and Printing

Fonteix, Guillemette **mar 2018 – aug 2018**
Summer Intern
Ecole Nationale des Sciences Géographiques
(ENSG) (France)
French National School of Geographic Sciences
Topic: Geospatial Mapping Protocol and Survey
of Underground Infrastructure

Ali, Sania **aug 2017 – may 2019**
Undergraduate Research Student
Civil Engineering
University of Illinois at Chicago
Topic: Food Carbon Footprint Smartphone App

Dana, Yousef **aug 2017 – aug 2018**
Undergraduate Research Student
Civil Engineering
University of Illinois at Chicago
Topic: Virtual Reality in Civil Engineering

Chenu, Bastien **mar 2017 – aug 2017**
Summer Intern
Ecole Nationale des Sciences Géographiques
(ENSG) (France)
French National School of Geographic Sciences
Topic: Geospatial Mapping of Underground
Infrastructure

Munoz, Jonathan **jun 2017 – aug 2017**
Guaranteed Paid Internship Program
Computer Science
University of Illinois at Chicago
Topic: Building an Online Food Carbon Footprint
Calculator

Machaj, Katherine **aug 2016 – may 2017**
Undergraduate Research Student
(NSF REU)
Civil Engineering

University of Illinois at Chicago
Topic: Surveying Preferences for Carbon
Footprint Smartphone App

Deans, Joshua **aug 2016 – may 2017**
Undergraduate Research Student
(NSF REU)
Civil Engineering
University of Illinois at Chicago
Topic: Assessment of Carbon Footprint
Calculators

Sitko, Katarzyna **aug 2016 – may 2017**
Undergraduate Research Student
Civil Engineering
University of Illinois at Chicago
Topic: 3D Printing in Civil Engineering

Hill, Ian **aug 2016 – dec 2016**
Undergraduate Research Student
(Chancellor's Awards)
Civil Engineering
University of Illinois at Chicago
Topic: Data Analysis of Building Energy Use

Shaw, Jovaun **aug 2016 – dec 2016**
Undergraduate Research Student
Civil Engineering
University of Illinois at Chicago
Topic: GIS Mapping of Civil Engineering Systems

Norberto, Julia **may 2016 – jul 2016**
Exchange Research Fellow
Brazilian Scientific Mobility Program
Civil Engineering
University of Illinois at Chicago
Topic: Facility-Scale Urban Metabolism

Santos, Patricia **may 2016 – aug 2016**

Exchange Research Fellow
Brazilian Scientific Mobility Program
Civil Engineering
University of Illinois at Chicago
Topic: Climate and Building Energy Use

Marinho, Rodrigo **may 2016 – aug 2016**
Exchange Research Fellow
Brazilian Scientific Mobility Program
Civil Engineering
University of Illinois at Chicago
Topic: Python and QGIS Tool Development

Alves, Felipe **may 2016 – aug 2016**
Exchange Research Fellow
Brazilian Scientific Mobility Program
Civil Engineering
University of Illinois at Chicago
Topic: Network Properties of Urban Roads

Klawitter, David **jan 2016 – aug 2016**
Research Affiliate
Civil Engineering
University of Illinois at Chicago
Topic: Climate and Water Consumption

Cairo, Peter **jan 2016 – aug 2016**
Undergraduate Research Student
Civil Engineering
University of Illinois at Chicago
Topic: US Water Consumption

Imsha, Saulius **jan 2016 – oct 2016**
Undergraduate Research Student
Civil Engineering
University of Illinois at Chicago
Topic: Building Energy Use

Kessler, Daniel **jan 2015 – may 2016**
Undergraduate Research Student
Civil Engineering
University of Illinois at Chicago
Topic: Bipartite Representation of Infrastructure Networks

de Souza, Paloma Morais **aug 2015 – may 2016**
Exchange Research Fellow
Brazilian Scientific Mobility Program
Civil Engineering
University of Illinois at Chicago
Topic: UIC Infrastructure Systems as Networks

White, Kimberly **aug 2015 – dec 2015**
Undergraduate Research Student
Civil Engineering
University of Illinois at Chicago
Topic: Engineering Structures as Complex Structures

Reeder, Matthew **aug 2014 – aug 2015**
Undergraduate Research Fellow
(Chancellor's Award)
Civil Engineering
University of Illinois at Chicago
Topic: Commercial Building Electricity Use

Sombrio, Eduardo Schaefer **may 2015 – aug 2015**
Exchange Research Fellow
Brazilian Scientific Mobility Program
Civil Engineering
University of Illinois at Chicago
Topic: Network Properties of Road Systems

Godinho Jr., Flavio Irã **may 2015 – aug 2015**

Exchange Research Fellow
Brazilian Scientific Mobility Program
Civil Engineering
University of Illinois at Chicago
Topic: UIC Infrastructure Systems as Networks

Agondanou, Nouhessedo **aug 2014 – may 2015**

Undergraduate Researcher
Civil Engineering
University of Illinois at Chicago
Topic: Modeling Building Energy Use

Nainggolan, Laura **aug 2014 – dec 2014**

Undergraduate Researcher
Civil Engineering
University of Illinois at Chicago
Topic: Modeling the Impacts of Extreme Events

Nedumgottil, Anthony **jun 2014 – aug 2014**

Guaranteed Paid Internship Program
Computer Science
University of Illinois at Chicago
Topic: Building an Online Network Calculator

Pereira, Felipe **may 2014 – aug 2014**

Exchange Research Fellow
Brazilian Scientific Mobility Program
Civil Engineering
University of Illinois at Chicago
Topic: Genetic Optimization of Metro Design

Andrew, Gary (Joe) **jan 2014 – may 2014**

Undergraduate Research Fellow
(Chancellor's Award)
Civil Engineering
University of Illinois at Chicago
Topic: Structures as Complex Systems

Jacobs, Paul **aug 2013 – may 2014**
Undergraduate Research Fellow
(Chancellor's Award)
Civil Engineering
University of Illinois at Chicago
Topic: Urban Water Systems

Agamy, Marian **aug 2013 – dec 2013**

Undergraduate Research Fellow
(Chancellor's Award)
Civil Engineering
University of Illinois at Chicago
Topic: Sustainable Bridges

Roux, Sabine **apr – aug 2010**

Exchange student from Ecole Nationale des Travaux Publics de l'Etat (ENTPE)
Civil Engineering
University of Toronto
Topic: Transportation Infrastructure in the Urban Metabolism

08 teaching experience

university of illinois at chicago

CME594 Introduction to Data Science

Fall 2021 – 24 students – instructor
Graduate course

CME440 Cities & Sustainable Infrastructure

Spring 2021 – 34 students – instructor
Graduate and Senior course

CME112 Evolution of Infrastructure & Society

Spring 2021 – 73 students – instructor
Undergraduate course

CME594 Introduction to Data Science

Fall 2020 – 23 students – instructor
Graduate course

CME112 Evolution of Infrastructure & Society

Fall 2020 – 63 students – instructor
Undergraduate course

CME594 Introduction to Data Science

Spring 2019 – 38 students – instructor
Graduate course

CME440 Cities & Sustainable Infrastructure

Fall 2018 – 38 students – instructor
Graduate and Senior course
See [The Image of Chicago](#) poster (3.9 Mb)
See [Design Project Book](#) Compilation (32.2 Mb)

CME594 Introduction to Data Science

Spring 2018 – 33 students – instructor
Graduate course

CME440 Cities & Sustainable Infrastructure

Fall 2017 – 43 students – instructor
Graduate and Senior course
See [The Image of Chicago](#) poster (5.5 Mb)
See [Design Project Book](#) Compilation (21.4 Mb)

CME594 Introduction to Data Science

Spring 2017 – 15 students – instructor
Graduate course

CME440 Cities & Sustainable Infrastructure

Fall 2016 – 51 students – instructor
Graduate and Senior course
See [The Image of Chicago](#) poster (4 Mb)
See [Design Project Book](#) Compilation (28.3 Mb)

CME594 Introduction to Data Science

Spring 2016 – 13 students – instructor
Graduate course

CME 311 Water Resources Engineering

Fall 2015 – 34 students – instructor
Junior course

CME 494 Cities & Sustainable Infrastructure

Spring 2015 – 35 students – instructor
Graduate and Senior course
See [The Image of Chicago](#) poster (48.3 Mb)
See [Design Project Book](#) Compilation (32.1 Mb)

CME 311 Water Resources Engineering

Fall 2014 – 48 students – instructor
Junior course

CME594 Cities and Complexity

Spring 2014 – 6 students – instructor
Graduate course

See [Visualization Poster](#) (5.6Mb)

CME 311 Water Resources Engineering

Fall 2013 – 46 students – instructor
Junior course

CME 494 Cities & Sustainable Infrastructure

Spring 2013 – 19 students – instructor
Graduate and Senior course
See [Design Project Book](#) Compilation (11.7 Mb)

CME 311 Water Resources Engineering

Fall 2012 – 47 students – instructor
Junior course

university of toronto

CIV 577 Infrastructure for Sustainable Cities

Spring 2010 – 47 students – teaching assistant
Graduate and Senior course

CIV 1310 Infrastructure Economics

Fall 2009 – 70 students – teaching assistant
Graduate course

EDV 250 Hydrology and Hydraulics

Spring 2009 – 127 students – teaching assistant
Sophomore course

CIV 368 Engineering Economics and Decision-Making

Fall 2008 – 114 students – teaching assistant
Junior course

CIV 235 Civil Engineering Graphics PO1

Spring 2008 – 108 students – teaching assistant
Sophomore course

CIV 1310 Infrastructure Economics

Fall 2007 – 51 students – teaching assistant
Graduate course

**CIV 425 Design of sustainable
neighbourhoods**

Fall 2006 and Spring 2007 – 40 students –
teaching assistant
Senior course

09 academic and professional services

professional services

ASCE Open: Multidisciplinary Journal of Civil Engineering jul 2022 – pres
Open Access Advisory Council Member

Bioéconomie pour les territoires urbains (BETTER) apr 2022 – pres
Scientific Advisory Board Member
Institut National de Recherche pour l'Agriculture, l'alimentation et l'Environnement (INRAE)

International Conference series on Geotechnics, Civil Engineering and Structures (CIGOS) oct 2021
Scientific Committee Member
Ha Long Bay, Vietnam

Actionable Science for Urban Sustainability (AScUS) 2021 jun 2021
Organizing Committee
Online

Bridging Transportation Researchers (BTR) aug 2020
Session Chair
Online

Actionable Science for Urban Sustainability (AScUS) 2020 jun 2020
Organizing Committee
Discussion Session Organizer
Segovia, Spain (online)

International Conference series on Geotechnics, Civil Engineering and Structures (CIGOS) oct 2019
Scientific Committee Member
Session Chair
Hanoi, Vietnam

International Society for Industrial Ecology (ISIE) 2019 jul 2019
Session Organizer and Chair
Scientific Committee Member
Beijing, China

C.A.C.S.S. Cactus Show apr 2019
Cactus Competition Judge
Desert Botanical Garden, Phoenix, AZ

Buildings, Cities, and Performance — 3rd International Graduate Student Symposium of the PhD Program at IIT College of Architecture nov 2018
Scientific Committee Member
Chicago, IL

Transportation Network Modeling Committee (ABD30) — Transportation Research Board (TRB) jun 2018 – jun 2021
Committee Member

International Symposium on Sustainable Systems and Technology (ISSST) 2018 jun 2018
Resilient Infrastructure Technical Committee Member
Buffalo, NY

1st International Conference on New Horizons in Green Civil Engineering (NHICE-01) apr 2018
Scientific Committee Member
Victoria, BC

Sustainable Urban Systems (SUS) Section — International Society for Industrial Ecology nov 2017 – dec 2020
Chair

Critical Transportation Infrastructure Protection Committee (ABR10) — Transportation Research Board (TRB) nov 2017 – pres
Vice-Chair

Dream Big: Engineering our World oct 2017
Speaker

Envisioning Future Cities sep 2017
Workshop Organizer (Brooklyn NY)

Girls Who Code (GWC) jul 2017
Speaker

International Society for Industrial Ecology (ISIE) 2017 jun 2017
Session Chair
Chicago, IL

Data Mining in Industrial Ecology — International Society for Industrial Ecology jun 2017
Workshop Organizer

Organizing Research for Infrastructure Resilience — International Symposium on Sustainable Systems and Technology
jun 2017

Workshop Organizer

Critical Transportation Infrastructure Protection Committee (ABR10) — Transportation Research Board (TRB)
apr 2017 – nov 2017

Committee Member

Girls Who Code (GWC) jul 2016
Speaker

International Symposium on Sustainable Systems and Technology (ISSST) 2016
may 2016

Session Chair

Poster Competition Judge

Phoenix, AZ

Sustainable Urban Systems (SUS) Section — International Society for Industrial Ecology
may 2016 – oct 2017

Co-Chair

International Society for Industrial Ecology
dec 2015 – dec 2018

Council Member

International Society for Industrial Ecology (ISIE) 2017 Biennale Conference
jul 2015 – jul 2017

Organizing Committee (Host Institution)

University of Illinois at Chicago

Sustainable Urban Systems (SUS) Section — International Society for Industrial Ecology
feb 2015 – apr 2016

Board Member

International Symposium on Sustainable Systems and Technology (ISSST) 2015
may 2015

Poster Competition Judge

Dearborn, MI

International Society for Industrial Ecology (ISIE) 2013 Biennale Conference jun 2013

Poster Competition Judge

University of Ulsan, South Korea

Illinois (Chicago) Future Cities Competition (Grade 6-8 students) jan 2013

Judge Panel Member

Rail Transit Systems Committee (AP065) — Transportation Research Board (TRB)
apr 2010 – pres

Committee Member

academic services

university of illinois at chicago

CME Graduate Committee
sep 2021 – aug pres

Member

UIC Senate Research Committee
sep 2020 – pres

Member

UIC Senate
sep 2020 – pres

Member

CME Undergraduate Curriculum Committee
sep 2020 – pres

Member

CME Undergraduate Recruitment Committee
sep 2020 – pres

Member

CME Undergraduate Recruitment Committee
sep 2017 – jul 2019

Chair

CME Undergraduate Curriculum Committee
sep 2017 – aug 2019

Member

CME Advisory Committee
sep 2016 – aug 2020

Member (elected)

UIC Graduate College Awards Committee
sep 2015 – aug 2017

Member

CME Graduate Committee
sep 2015 – aug 2017

Member

CME Computer Committee
sep 2015 – aug 2017

Member

CME Website Committee apr 2015 – aug 2016

10 professional and scientific memberships

Member, American Society of Civil Engineers (ASCE) 2012 – pres

Member, International Society for Industrial Ecology (ISIE) 2009 – pres

Vice Chair, TRB Critical Infrastructure Protection (ABR10) 2017 – pres

Member, TRB Transportation Network Modeling Committee (ABD30) 2018 – 2021

Member, TRB Rail Transit Systems Committee (AP065) 2022 –2022

Member, TRB Rail Transit Systems Committee (AP065) 2010 –2022

Friend, TRB Rail Transit Systems Committee (AP065) 2009 – 2010

Friend, TRB Transportation Network Modeling (ADB30) 2014 – 2018

Member, Institute of Transportation Engineering (ITE) 2009 – 2014

Friend, TRB Intercity Passenger Rail Committee (AR010) 2009 – 2013

Friend, TRB Transportation and Economic Development Committee (ADD10) 2009 – 2013

Member, Canadian Transportation Research Forum (CTRF) 2009 – 2012

Member, Canadian Society of Civil Engineers (CSCE) 2007 - 2012

11 hobbies

- Swimming
- Free Diving (AIDA 2* certified)
- Scuba Diving (PADI Open Water certified)
- Antiopées (i.e., wander around cities as defined by Raymond Queneau)
- Reading
- Traveling