

Lu Gao
Associate Professor & Graduate Program Coordinator
Director of Civil Infrastructure Systems Management Lab
Department of Construction Management
University of Houston

1 Contact Information

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2 Research Interests

Big Data in Construction Industry and Asset Management, Artificial Intelligence, Machine Learning, Data Science, Natural Language Processing

3 Work Experience

- 2017.9-present, Associate Professor, Department of Construction Management, University of Houston
- 2015.12-present, Director of Graduate Program, Department of Construction Management, University of Houston
- 2011.9-2017.8, Assistant Professor, Department of Construction Management, University of Houston
- 2005.9-2011.8, Graduate Research Assistant, Center for Transportation Research, The University of Texas at Austin

4 Education

- Ph.D., Department of Civil, Architectural and Environmental Engineering, The University of Texas at Austin, 2011
 - Dissertation Topic: *Optimal Infrastructure Maintenance Scheduling Problem Under Budget Uncertainty*
 - Adviser: Professor Zhanmin Zhang
- M.S., Department of Civil, Architectural and Environmental Engineering, The University of Texas at Austin, 2007
 - Thesis Topic: *Development of a Cost Estimation Tool for Right of Way*
 - Adviser: Professor Zhanmin Zhang
- B.E., Civil Engineering, Tsinghua University, 2005
 - Minor in Construction Management

5 Research

5.1 Funded Projects

12. Principal Investigator, "Quantification of the Performance of Preventive Maintenance and Rehabilitation Strategies", collaborate with The University of Texas at Austin, Texas Department of Transportation, TxDOT 0-6988, \$349,885. 9/2018-8/2020.
11. Principal Investigator, "Labor and Equipment Movement Data Analytics", Fluor Corporation, \$100,000, 9/2018-8/2019.
10. Co-Principal Investigator, "Rule-Based Automated Safety Monitoring System for Highway Work Zone Safety", collaborate with Texas Southern University, NCHRP Highway IDEA, \$139,915, 5/2018 to 4/2020.
9. Principal Investigator, "Labor Productivity and Equipment Utilization Data Analytics", Department of Construction Management, University of Houston, \$5,000, 6/2017-12/2017.
8. Principal Investigator, "Synthesis of Service Life Prediction for Bridges in Texas", Texas Department of Transportation, TxDOT 17-146, \$59,705. 9/2016 to 8/2017.
7. Co-Principal Investigator, "Investigating the Security of TxDOT's Traffic Signal Systems", collaborate with Texas Southern University, Texas Department of Transportation, TxDOT 17-117, \$173,800. 9/2016 to 8/2018.
6. Principal Investigator, "Transportation and Economic Impact of Texas Shortline Railroads", collaborate with Texas Southern University, Texas Department of Transportation, TxDOT 0-6887, \$297,252. 9/2015 to 9/2016.
5. Principal Investigator, "Automatic Information Extraction From Traffic Crash Reports", University of Houston, \$3,000, 2014.
4. Principal Investigator, "Machine Learning-Based Text Mining of Construction Job Market", University of Houston, \$3,000, 2013.
3. Principal Investigator, "Study of Short Term Skid Improvements by Light Texturing with a Milling Machine", collaborate with The University of Texas at Austin, Texas Department of Transportation, TxDOT 0-6752, \$297,468. 9/2012 - 9/2014.
2. Principal Investigator, "Manage the Transportation System", Texas Department of Transportation, TxDOT 6-0701, 2012, \$75,000. 1/2012 to 8/2012.
1. Principal Investigator, "Optimal Maintenance of Large Scale Spatially Distributed Civil Infrastructure Systems", University of Houston, \$6,000, 2011.

6 Publications

6.1 Journal Papers

17. Lu Gao, Feng Hong, and Venkata Vemuri (2019) Integrated Planning and Scheduling in Transportation Infrastructure Maintenance Management, *Journal of Traffic and Transportation*, accepted for publication.
16. Omkar Dhattrak, Venkata Vemuri, and Lu Gao. (2019) Considering Deterioration Propagation in Transportation Infrastructure Maintenance Planning, *Journal of Traffic and Transportation Engineering*, accepted for publication.
15. Lu Gao, Daisy Saldarriaga, Boya You, Fengxiang Qiao, and Qing Li. (2018) Evaluation of Transportation and Economic Impact of Short Line Railroads in Texas. *International Journal of Rail Transportation (TJRT)*, Published Online: 24 Oct 2018. doi:10.1080/23248378.2018.1538827.

14. Zhanmin Zhang and Lu Gao. (2018). A Nested Modeling Approach to Infrastructure Performance Characterization, *International Journal of Pavement Engineering*, 19:2, 174-180. doi:10.1080/10298436.2016.1172712
13. Lu Gao, Yao Yu, and Wuling Liang. (2016). Public Transit Customer Satisfaction Dimensions Discovery from Online Reviews, *Urban Rail Transit*, 2-146. doi:10.1007/s40864-016-0042-0.
12. Lu Gao and Curt Webb. (2016). Schedule Compression Impact on Construction Project Safety, *Frontiers of Engineering Management*, 2(4), 344-350. doi:10.15302/J-FEM-2015059
11. Lu Gao, Andre Smit, Jorge Prozzi, Prasat Buddhavarapu, Mike Murhpy, and Linguang Song. (2015). Milled Pavement Texturing to Optimize Skid Improvements, *Construction and Building Materials*, 101(1), 602-610. doi:10.1016/j.conbuildmat.2015.10.077
10. Hui Wu, Lu Gao, and Zhanmin Zhang. (2014). Analysis of Crash Data Using Quantile Regression for Counts, *ASCE Journal of Transportation Engineering*, 140(4). doi:10.1061/(ASCE)TE.1943-5436.0000650
9. Lu Gao and Neil Eldin. (2014). Employers' Expectations: A Probabilistic Text Mining Model. *Procedia Engineering*, 85, 175-182. doi:10.1016/j.proeng.2014.10.542
8. Lu Gao and Zhanmin Zhang. (2013). Management of pavement maintenance, rehabilitation, and reconstruction through network partition. *Transportation Research Record: Journal of the Transportation Research Board*, (2366), 59-63. doi:10.3141/2366-07
7. Lu Gao, Runhua and Zhanmin Zhang. (2013). An Augmented Lagrangian Decomposition Approach for Infrastructure Maintenance and Rehabilitation Decisions under Budget Uncertainty, *Structure and Infrastructure Engineering*, 9(5), pp.448-457. doi:10.1080/15732479.2011.557388
6. Lu Gao and Zhanmin Zhang. (2012). Approximation Approach to Problem of Large-Scale Pavement Maintenance and Rehabilitation. *Transportation Research Record: Journal of the Transportation Research Board*, (2304), 112-118. doi:10.3141/2304-13
5. Lu Gao, Jose Aguiar-Moya and Zhanmin Zhang. (2012). A Bayesian Analysis of Heterogeneity in Modeling of Pavement Fatigue Cracking, *Journal of Computing in Civil Engineering*, 26(1), pp.37-44. doi:10.1061/(ASCE)CP.1943-5487.0000114
4. Lu Gao, Chi Xie, Zhanmin Zhang, and Travis Waller. (2012). Network-Level Road Pavement Maintenance and Rehabilitation Scheduling for Optimal Performance Improvement and Budget Utilization. *Computer-Aided Civil and Infrastructure Engineering*, 27(4), pp.278-287. doi:10.1111/j.1467-8667.2011.00733.x
3. Lu Gao, Chi Xie, Zhanmin Zhang, and Travis Waller. (2011). Integrated Transportation Network Maintenance and Expansion Problem, *Journal of the Transportation Research Record*, 2225, pp.56-64. doi:10.3141/2225-07
2. Lu Gao, Jose Aguiar-Moya, and Zhanmin Zhang. (2011). Performance Modeling of Infrastructure Condition Data with Maintenance Intervention, *Journal of the Transportation Research Record*, 2225, pp.109-116. doi:10.3141/2225-12
1. Lu Gao and Zhanmin Zhang. (2008). Robust Optimization for Managing Pavement Maintenance and Rehabilitation. *Journal of the Transportation Research Record*, 2084, pp.55-61. doi:10.3141/2084-07

6.2 Working Papers

8. Pan Lu, Qiang Li, Lu Gao. Imbalanced Data in Highway Rail Grade Crossing Modeling
7. Dhatrak, O. and Gao, L. Modeling Economy of Scale in Maintenance Planning of Civil Infrastructure Networks.
6. Gao, L, Ai, Y., Yu, Y. Network-Level Travel Time Prediction Considering the Effects of Weather and Seasonality
5. Gao, L., Dehkordi, V., Hong, F. Pavement Maintenance and Rehabilitation Planning Optimization for Large-Scale Road Network
4. Gao, L., Kim, K. Voice-Based Information Retrieval in a Smart Construction Environment.
3. Gao, L., Bridge deterioration modeling using NBI Data
2. Gao, L., Effects of Temperature and Precipitation on Skid Resistance: A Dynamic Panel Model Approach
1. Gao, L. and Hong, F., Impacts of Seasonal and Annual Weather Variations on Network-Level Pavement Performance

6.3 Conference Proceedings

25. Prasad, T., Gao, L., and Qiu, S. (2017) Bayesian Detection of Unrecorded Maintenance and Rehabilitation Treatments in Pavement Management, *Proceedings of the Transportation Research Boards' 96th Annual Meeting*, Washington, D.C.
24. Du, J., Qiao, F., Yu, L., Gao, L. (2017) Planning of Campus Area Nighttime Public Transportation System Based on GIS and Operation Research, *Proceedings of the Transportation Research Boards' 96th Annual Meeting*, Washington, D.C.
23. Saldarriaga, D., You, B., Gao, L., and Qiao, F. (2017), Evaluation of Transportation and Economic Impact of Short Line Railroad in Texas, *Proceedings of the Transportation Research Boards' 96th Annual Meeting*, Washington, D.C.
22. Gao, L. (2016) Developing a Bayesian Model to Recover Missing Pavement Maintenance and Rehabilitation Data, *Proceedings of the 2016 Annual Conference of the Canadian Society for Civil Engineering*, London, Canada.
21. Jahanbakhsh, S., Gao, L. and Zhang, Z. (2016) Estimating Spatial Dependence Associated with Deterioration Process of Road Network, *Proceedings of the Transportation Research Boards' 95th Annual Meeting*, Washington, D.C.
20. Gao, L. and Eldin, N. (2014) Employers' Expectations: A Probabilistic Text Mining Model, *Creative Construction Conference 2014*, CC2014.
19. Gao, L. (2014) Skill Sets of Construction Career Pathways, *Proceedings of the Transportation Research Boards' 93rd Annual Meeting*, Washington, D.C.
18. Gao, L. and Wu, H. (2013) Verb-Based Text Mining of Road Crash Report, *Proceedings of the Transportation Research Boards' 92nd Annual Meeting*, Washington, D.C.
17. Gao, L., Wu, H. and Zhang, Z. (2013) Analyzing Use of Facebook Pages Among State Departments of Transportation, *Proceedings of the Transportation Research Boards' 92nd Annual Meeting*, Washington, D.C.
16. Gao, L. and Zhang, Z. (2013) Pavement Maintenance Management Through Network Partition, *Proceedings of the Transportation Research Boards' 92nd Annual Meeting*, Washington, D.C.

15. Gao, L. and Zhang, Z. (2012) An Approximate Approach to Large-Scale Pavement Maintenance and Rehabilitation Problem, *Proceedings of the Transportation Research Boards' 91st Annual Meeting*, Washington, D.C.
14. Gao, L., Chi, S., Prozzi, J., Murphy, M., Zhang, Z., Sims, T. and Yildirim, Y. (2012) Peer State Assessment of TxDOT Maintenance Program and Practices, Part II: Test Section Survey Findings and Recommendations, *Proceedings of the Transportation Research Boards' 91st Annual Meeting*, Washington, D.C.
13. Gao, L., Aguiar-Moya, J. and Zhang, Z. (2011) Performance Modeling of Infrastructure Condition Data with Maintenance Intervention, *Proceedings of the Transportation Research Boards' 90th Annual Meeting*, Washington, D.C.
12. Wu, H., Gao, L. and Zhang, Z. (2011) Analysis of Crash Data Using Quantile Regression for Counts, *Proceedings of the Transportation Research Boards' 90th Annual Meeting*, Washington, D.C.
11. Gao, L., Xie, C., Zhang, Z. and Waller, S.T. (2011) Integrated Transportation Network Maintenance and Expansion Problem, *Proceedings of the Transportation Research Boards' 90th Annual Meeting*, Washington, D.C.
10. Guo, R. and Gao, L. (2011) Optimal Pavement Maintenance Policy under Warranty Contract, *Proceedings of The Transportation Research Boards' 90th Annual Meeting*, Washington, D.C.
9. Gao, L., Guo, R. and Zhang, Z. (2011) An Augmented Lagrangian Decomposition Approach for Infrastructure Maintenance and Rehabilitation Decisions under Budget Uncertainty, *Proceedings of the Transportation Research Boards' 90th Annual Meeting*, Washington, D.C.
8. Gao, L., Aguiar-Moya, J. and Zhang, Z. (2011) A Bayesian Analysis of Heterogeneity in Modeling of Pavement Fatigue Cracking, *Proceedings of the Transportation Research Boards' 90th Annual Meeting*, Washington, D.C.
7. Ng, M., Gao, L. and Waller, S.T. (2010) Optimal Work Zone Lengths and Signal Timing for Two-Lane Highways Revisited: The Need to Consider Stochasticity, *Proceedings of the Transportation Research Boards' 89th Annual Meeting*, Washington, D.C.
6. Zhang, Z. and Gao, L. (2010) Predicting Pavement Deterioration: A Sequential Logit Model Approach, *Proceedings of the Transportation Research Boards' 89th Annual Meeting*, Washington, D.C.
5. Gao, L., Xie, C., Zhang, Z. and Waller, S.T. (2010) Network-Level Multi-Objective Optimal Maintenance and Rehabilitation Scheduling, *Proceedings of the Transportation Research Boards' 89th Annual Meeting*, Washington, D.C.
4. Gao, L. and Zhang, Z. (2010) The Effect of Budget Uncertainty on Road Network Condition Fluctuation, *Proceedings of the Transportation Research Boards' 89th Annual Meeting*, Washington, D.C.
3. Gao, L. and Zhang, Z. (2009) An Approximate Dynamic Programming Approach to Network-Level Budget Planning and Allocation for Pavement Infrastructure, *Proceedings of the Transportation Research Boards' 88th Annual Meeting*, Washington, D.C.
2. Gao, L. and Zhang, Z. (2008) Robust Optimization for Managing Pavement Maintenance and Rehabilitation, *Proceedings of the Transportation Research Boards' 87th Annual Meeting*, Washington, D.C.
1. Gao, L., Zhang, Z. and Tighe, S. (2007) Using Markov Process and Method of Moments for Optimizing Management Strategies of Pavement Infrastructure, *Proceedings of the Transportation Research Boards' 86th Annual Meeting*, Washington, D.C.

6.4 Technical Reports

8. Qiao, F., Gao, L., Saldarriaga, D., You, B., Li, Q., Song, L., Senouci, A., Dhattrak, O., and Yu, L. (2016). Transportation and Economic Impact of Texas Short Line Railroads, Texas Department of Transportation Report 0-6887.
7. Gao, L., Smit, A., Prozzi, J., Buddhavarapu, P., Murphy, M., and Song, L. (2014). Study of Short Term Skid Improvements by Light Texturing with a Milling Machine, Texas Department of Transportation report.
6. Zhang, Z., Walton, C. M., Machemehl, R. B., Bhat, C., Gao, L., Porrás-Alvarado, J. D., and Peters, D. (2013). An Integrated Approach to Managing the Finance, Maintenance, and Operation of Transportation Systems, Texas Department of Transportation report FHWA/TX-13/6-0701-1.
5. Prozzi, J., Gao, L., Chi, S., Centurion, C., Murphy, M., Yildirim, Y., and Zhang, Z. (2012). Maintenance Test Section Survey: Data Collection and Analysis, Texas Department of Transportation report FHWA/TX-11/0-6664.
4. Gao, L., Chi, S., Prozzi, J., Yildirim, Y., Zhang, Z., Centurion, C., and Murphy, M. (2011). Peer State Assessment of TxDOT Maintenance Program and Practices-Workshop and Road Rally Findings, Texas Department of Transportation report FHWA/TX-11/0-6664-1.
3. Gao, L., and Zhang, Z. (2011). Optimal Infrastructure Maintenance Scheduling Problem Under Budget Uncertainty, Southwest Region University Transportation Center report SWUTC/11/161028-1.
2. Caldas, C., Escatel, R., Gao, L., Kockelman, K., and Zhang, Z. (2006). Estimating the Cost of Right-of-Way Acquisitions Along Texas Corridors, Texas Department of Transportation report FHWA/TX-07/5-4079-01-1.
1. Caldas, C., Escatel, R., Gao, L., Kockelman, K., and Zhang, Z. (2006). Right-of-Way Cost Estimating Tool User Manual, Texas Department of Transportation report.

7 Presentations

7.1 Conference Talks

29. Rule-Based Automated Safety Monitoring for Work Zone Safety. Presented at the Transportation Research Boards' 98th Annual Meeting, Washington, D.C. January 14, 2019.
28. Integrated Planning and Scheduling in Pavement Maintenance Management. Presented at the 2nd World Transport Convention, Beijing, China. June 20, 2018.
27. Considering Deterioration Propagation in Transportation Infrastructure Maintenance Planning. Presented at the 30th International Chinese Transportation Professionals Association (ICTPA) Annual Meeting, Houston, Texas. May 21, 2017.
26. Integrated Planning and Scheduling in Pavement Maintenance Management. Presented at the 30th International Chinese Transportation Professionals Association (ICTPA) Annual Meeting, Houston, Texas. May 21, 2017.
25. Bayesian Detection of Unrecorded Maintenance and Rehabilitation Treatments in Pavement Management. Presented at the Transportation Research Boards' 96th Annual Meeting, Washington, D.C. January 15, 2017.
24. Evaluation of Transportation and Economic Impact of Short Line Railroad in Texas. Presented at the Transportation Research Boards' 96th Annual Meeting, Washington, D.C. January 15, 2017.
23. Developing a Bayesian Model to Recover Missing Pavement Maintenance and Rehabilitation Data, Presented at the 2016 Annual Conference of the Canadian Society for Civil Engineering, London, Ontario. June 1, 2016.

22. Estimating Spatial Dependence Associated with Deterioration Process of Road Network, Presented at the Transportation Research Boards' 95th Annual Meeting, Washington, D.C. January 17, 2016.
21. Skill Sets of Construction Career Pathways, Presented at the Transportation Research Boards' 93rd Annual Meeting, Washington, D.C. January 15, 2014.
20. Verb-Based Text Mining of Road Crash Report, Presented at the Transportation Research Boards' 92nd Annual Meeting, Washington, D.C. January 17, 2013.
19. Analyzing Use of Facebook Pages Among State Departments of Transportation, Presented at the Transportation Research Boards' 92nd Annual Meeting, Washington, D.C. January 16, 2013.
18. Pavement Maintenance Management Through Network Partition, Presented at the Transportation Research Boards' 92nd Annual Meeting, Washington, D.C. January 15, 2013.
17. An Approximate Approach to Large-Scale Pavement Maintenance and Rehabilitation Problem, Presented at the Transportation Research Boards' 91st Annual Meeting, Washington, D.C. January 16, 2012.
16. Peer State Assessment of TxDOT Maintenance Program and Practices, Part II: Test Section Survey Findings and Recommendations, Presented at the Transportation Research Boards' 91st Annual Meeting, Washington, D.C. January 15, 2012.
15. Performance Modeling of Infrastructure Condition Data with Maintenance Intervention, Presented at the Transportation Research Boards' 90th Annual Meeting, Washington, D.C. January 12, 2011.
14. Integrated Transportation Network Maintenance and Expansion Problem, Presented at the Transportation Research Boards' 90th Annual Meeting, Washington, D.C. January 16, 2011.
13. Optimal Pavement Maintenance Policy under Warranty Contract, Presented at the Transportation Research Boards' 90th Annual Meeting, Washington, D.C. January 16, 2011.
12. An Augmented Lagrangian Decomposition Approach for Infrastructure Maintenance and Rehabilitation Decisions under Budget Uncertainty, Presented at the Transportation Research Boards' 90th Annual Meeting, Washington, D.C. January 17, 2011.
11. A Bayesian Analysis of Heterogeneity in Modeling of Pavement Fatigue Cracking, Presented at the Transportation Research Boards' 90th Annual Meeting, Washington, D.C. January 16, 2011.
10. Predicting Pavement Deterioration: A Sequential Logit Model Approach, Presented at the Transportation Research Boards' 89th Annual Meeting, Washington, D.C. January 18, 2010.
9. Integrated Transportation Network Maintenance and Expansion Problem, Presented at the Annual Meeting of the Institute for Operations Research and Management Sciences, Austin, TX. November 7, 2010.
8. Network-Level Multi-Objective Optimal Maintenance and Rehabilitation Scheduling, Presented at the Transportation Research Boards' 89th Annual Meeting, Washington, D.C. January 16, 2010.
7. The Effect of Budget Uncertainty on Road Network Condition Fluctuation, Presented at the Transportation Research Boards' 89th Annual Meeting, Washington, D.C. January 16, 2010.
6. A Bayesian Analysis of Heterogeneity in Modeling of Pavement Fatigue Cracking, Presented at the 6th Annual Inter-University Symposium on Infrastructure Management, Newark, DE. May 17, 2010.
5. An Approximate Dynamic Programming Approach to Network-Level Budget Planning and Allocation for Pavement Infrastructure, Presented at the Transportation Research Boards' 88th Annual Meeting, Washington, D.C. January 16, 2009.
4. Robust Optimization for Managing Pavement Maintenance and Rehabilitation, Presented at the Transportation Research Boards' 87th Annual Meeting, Washington, D.C. January 15, 2008.

3. A strategy for solving the curse of dimensionality of the pavement maintenance and rehabilitation programming, Presented at the 3rd Annual Inter-University Symposium on Infrastructure Management, Austin, TX. January 17, 2008.
2. Using Markov Process and Method of Moments for Optimizing Management Strategies of Pavement Infrastructure, Presented at the Transportation Research Boards' 86th Annual Meeting, Washington, D.C. January 15, 2007.
1. Application of Markovian Technique to Deterioration Modeling of Pavement Infrastructure, Presented at the 2nd Annual Inter-University Symposium on Infrastructure Management, Newark, DE. November 15, 2006.

7.2 Invited Talks

9. Reliability and risk in infrastructure management, *5th Infrastructure Management Boot Camp*, University of Delaware, Newark, Delaware. June 14-15, 2018.
8. Data analysis using Python, Texas Southern University, Feb 7, 2018.
7. Large-Scale Road Network Maintenance Planning Modeling and Solution, Chang'an University, December 12, 2017.
6. Economic and Transportation Impact Analysis of Short Line Railroads, ASCE Live Webinar, August 15, 2017.
5. Considering Deterioration Propagation in Transportation Infrastructure Maintenance Planning. World Transport Convention, Beijing, China. June 5, 2017.
4. Life-Cycle Cost Analysis in Pavement Management, Texas Southern University, Houston, TX. November 17, 2016
3. Civil Infrastructure Systems Management, Texas Southern University, Houston, TX. November 10, 2016
2. Reliability analysis in infrastructure management, *4th Infrastructure Management Boot Camp*, Oklahoma State University, Stillwater, OK. June 14-15, 2016.
1. Transportation and Economic Impact Analysis of Texas Short Lines, Presented at International Chinese Transportation Professional Association (ICTPA) annual meeting, Washington, D.C. January 12, 2016.

8 Teaching

- **Spring 2019**, University of Houston
 - CNST6308 Data Analysis in Construction Management, Graduate Course
- **Fall 2018**, University of Houston
 - CNST4381 Reinforced Concrete Design and Building Codes, Undergraduate Course
 - CNST6370 Quality Management and Six Sigma in Construction Management, Graduate Course
- **Spring 2018**, University of Houston
 - CNST4381 Reinforced Concrete Design and Building Codes, Undergraduate Course
- **Fall 2017**, University of Houston
 - CNST4381 Reinforced Concrete Design and Building Codes, Undergraduate Course
 - CNST6308 Data Analysis in Construction Management, Graduate Course

- CNST6370 Quality Management and Six Sigma in Construction Management, Graduate Course
- **Spring 2017**, University of Houston
 - CNST4381 Reinforced Concrete Design and Building Codes, Undergraduate Course
 - CNST6308 Data Analysis in Construction Management, Graduate Course
- **Fall 2016**, University of Houston
 - CNST4381 Reinforced Concrete Design and Building Codes, Undergraduate Course
 - CNST6308 Data Analysis in Construction Management, Graduate Course
 - CNST6370 Quality Management and Six Sigma in Construction Management, Graduate Course
- **Spring 2016**, University of Houston
 - CNST4381 Reinforced Concrete Design and Building Codes, Undergraduate Course
 - CNST6308 Data Analysis in Construction Management, Graduate Course
 - CNST6380 LEED and Green Construction Principles in Construction Management, Graduate Course
- **Fall 2015**, University of Houston
 - CNST4381 Reinforced Concrete Design and Building Codes, Undergraduate Course
 - CNST6308 Data Analysis in Construction Management, Graduate Course
 - CNST6370 Quality Management and Six Sigma in Construction Management, Graduate Course
- **Spring 2015**, University of Houston
 - CNST4381 Reinforced Concrete Design and Building Codes, Undergraduate Course
 - CNST6380 LEED and Green Construction Principles in Construction Management, Graduate Course
- **Fall 2014**, University of Houston
 - CNST4381 Reinforced Concrete Design and Building Codes, Undergraduate Course
 - CNST3355 Strength of Construction Materials, Undergraduate Course
 - CNST6370 Quality Management and Six Sigma in Construction Management, Graduate Course
- **Spring 2014**, University of Houston
 - CNST4381 Reinforced Concrete Design and Building Codes, Undergraduate Course
 - CNST3355 Strength of Construction Materials, Undergraduate Course
 - CNST6380 LEED and Green Construction Principles in Construction Management, Graduate Course
- **Fall 2013**, University of Houston
 - CNST4381 Reinforced Concrete Design and Building Codes, Undergraduate Course
 - CNST3355 Strength of Construction Materials, Undergraduate Course
 - CNST6370 Quality Management and Six Sigma in Construction Management, Graduate Course
- **Spring 2013**, University of Houston
 - CNST4381 Reinforced Concrete Design and Building Codes, Undergraduate Course
 - CNST3355 Strength of Construction Materials, Undergraduate Course

- CNST6380 LEED and Green Construction Principles in Construction Management, Graduate Course
- **Fall 2012**, University of Houston
 - CNST4381 Reinforced Concrete Design and Building Codes, Undergraduate Course
 - CNST3355 Strength of Construction Materials, Undergraduate Course
 - CNST6370 Quality Management and Six Sigma in Construction Management, Graduate Course
- **Spring 2012**, University of Houston
 - CNST4381 Reinforced Concrete Design and Building Codes, Undergraduate Course
 - CNST3355 Strength of Construction Materials, Undergraduate Course
 - CNST6380 LEED and Green Construction Principles in Construction Management, Graduate Course
- **Fall 2011**, University of Houston
 - CNST6370 Quality Management and Six Sigma in Construction Management, Graduate Course

9 Service

9.1 College Service

4. College Strategic Planning Committee, College of Technology, University of Houston, 2016
3. Committee member, Dean's Advisory Committee, College of Technology, University of Houston, 2014-2015.
2. Committee member, Graduate Academic Committee, College of Technology, University of Houston, 2013-2014.
1. Committee member, Equipment and Facilities Committee, College of Technology, University of Houston, 2013-2014.

9.2 Department Service

8. Committee Chair, Promotion & Tenure Committee, Department of Construction Management, 2018-2019
7. Graduate program coordinator, Department of Construction Management, 2016 - Present
6. Committee member, Technology Project Management Faculty Search Committee, University of Houston, 2018.
5. Committee member, Construction Management Faculty Search Committee, University of Houston, 2018.
4. Committee member, Construction Management Faculty Search Committee, University of Houston, 2015.
3. Committee member, ACCE accreditation effort of the Construction Management program, Department of Construction Management, College of Technology, University of Houston, 2014.
2. Committee member, Construction Management Faculty Search Committee, University of Houston, 2013-2014.
1. Faculty Advisor, Sigma Lambda Chi International (SLC) chapter at the University of Houston, 2013-present.

9.3 Professional Service

9.3.1 Committee Service

6. Member of Water Transportation - Water Transport System Optimization - Waterborne Transport Oriented Logistics Management Technical Committee, World Transport Convention, 2018-present.
5. Chair of Infrastructure Finance, Investments and Management Discipline, World Transport Convention, 2017-present
4. Webinar subcommittee chair of the Infrastructure Systems Committee, American Society of Civil Engineering (ASCE), 2014-Present
3. Board member and membership committee chair of the International Association of Chinese Infrastructure Professionals (IACIP), 2015-Present
2. Member of the Technical Advisory Panel for the Research Management Committee 1 (RMC-1) of the Texas Department of Transportation, 2011-Present
1. Fellow of the International Road Federation (IRF), 2010

9.3.2 Referee Service

21. *ASCE Journal of Infrastructure Systems*
20. *ASCE Journal of Performance of Constructed Facilities*
19. *ASCE Journal of Transportation Engineering*
18. *Associated Schools of Construction Annual International Conference*
17. *Automation in Construction*
16. *Creative Construction Conference*
15. *Computers & Industrial Engineering*
14. *Computer-Aided Civil and Infrastructure Engineering*
13. *COTA International Conference of Transportation Professionals*
12. *IEEE ITS Transactions*
11. *International Journal of Pavement Engineering*
10. *International Journal of Sustainable Transportation*
9. *International Conference on Maintenance and Rehabilitation of Pavements*
8. *International Conference on Transportation Infrastructure and Materials*
7. *Journal of Computing in Civil Engineering*
6. *Journal of Transportation Research Record*
5. *Structure and Infrastructure Engineering*
4. *Transportation Research Boards Annual Meeting*
3. *Transportation Research Part C*
2. *Transportation Research Part E*
1. *Transportmetrica A: Transport Science*

9.3.3 Conference Service

8. Member of Organizing Committee, the 9th IACIP Annual Workshop, January 13, 2019, Washington DC., USA
7. Chair of Infrastructure Finance, Investments and Management Track, World Transport Convention, June 18-21, 2018 in Beijing, China.
6. Member of Organizing Committee, the 8th IACIP Annual Workshop, January 7, 2018, Washington DC., USA
5. Chair of Infrastructure Finance, Investments and Management Track, World Transport Convention, June 4-6, 2017 in Beijing, China.
4. Chair of Technical Program Committee, The 30th Annual Conference of International Chinese Transportation Professionals Association, May 19-21, 2017, Houston, TX, USA
3. Chair of Best Paper/Presentation Award Committee, The 30th Annual Conference of International Chinese Transportation Professionals Association, May 19-21, 2017, Houston, TX, USA
2. Member of Organizing Committee, 2016 International Conference on Transportation Infrastructure and Material (ICTIM), July 16-18, 2016, Xian, China
1. Area Editor, COTA International Conference of Transportation Professionals (CICTP), 2014

10 Student Advising

10.1 Master Students (as supervisor)

42. **Erika Palacios**
Thesis: *Data-Driven Labor Productivity Analysis*, University of Houston, expected to graduate in December 2019.
41. **Yihao Ren**
Thesis: *Pavement Maintenance Effectiveness Modeling*, University of Houston, expected to graduate in May 2019.
40. **Clayton Sparks**
Thesis: *Energy Efficiency in Building Process*, University of Houston, expected to graduate in May 2019.
39. **Niharika Anne**
Thesis: *Root Cause Analysis: change management in City of Houston Projects*, University of Houston, graduated in December 2018
38. **Darren Woods**
Thesis: *Productivity analysis of construction worker location tracking*, University of Houston, graduated in December 2018
37. **Likhitha Boyina**
Thesis: *Construction Progress Monitoring Image Retrieval with Percentile Data Using BIM*, University of Houston, graduated in May 2018
36. **Allie Jones**
Thesis: *Construction in the Urban Community Using Limited Resources*, University of Houston, graduated in May 2018
35. **Huiyan Yan**
Thesis: *Deep Learning in Bridge Service Life Prediction*, Department of Construction Management, University of Houston, graduated in Dec 2017

34. **George Dib** Thesis: *Early Contractor Involvement The Key to Construction Success in Industrial Projects*, University of Houston, graduated in Dec 2017
33. **Daisy Saldarriaga**, Thesis: *Economic Impact Analysis of Texas Short Line Railroads*, Department of Construction Management, University of Houston, May 2017
32. **Vahid Dehkordi**
Thesis: *Incorporating Decision-Tree in Pavement Management*, Department of Construction Management, University of Houston, May 2017
31. **Veronica Leonce**
Thesis: *Human Trafficking in the Construction Industry - Building Awareness, Erecting Prevention Plans and Maintaining Integrity*, Department of Construction Management, University of Houston, May 2017
30. **Lucky Ogbeide** Thesis: *Owner's and Contractor's Obligations in Identifying Flaws in Construction Contract in Qatar*, Department of Construction Management, University of Houston, May 2017
29. **Mike Paul Jordan**
Thesis: *Understanding the Adoption, Usage, and Barriers to BIM in Construction Estimating*, Department of Construction Management, University of Houston, December 2016
28. **Omkar Dhatrak**
Thesis: *Modeling Economy of Scale in Civil Infrastructure Maintenance Management*, Department of Construction Management, University of Houston, December 2016
27. **Tejus Prasad**
Thesis: *Integrated Planning and Scheduling of Pavement Maintenance*, Department of Construction Management, University of Houston, December 2016
26. **Jolita Aly**
Thesis: *Tilt-Up Construction Safety Analysis Based on OSHA Fatalities and Catastrophes (FAT/CAT) Reports (1984-2016)*, Department of Construction Management, University of Houston, December 2016
25. **Philippa Antonette Scroggie**
Thesis: *Using Integrated Technologies for Efficient Planning Processes and Schedule Optimization*, Department of Construction Management, University of Houston, May 2016
24. **Mikel Barbara**
Thesis: *Quantify the Impacts of Factors on Construction Workers' Under-Reporting of Near-Misses*, Department of Construction Management, University of Houston, Dec 2015
23. **Shahin Sajjadi**
Thesis: *Key Employability Competencies Required in the US Construction Industry: A Job Specific Approach*, Department of Construction Management, University of Houston, May 2015.
22. **Rushikesh Pardeshi**
Thesis: *Risk Averse Toll-Pricing Strategies Optimization*, Department of Construction Management, University of Houston, May 2015.
21. **Saryou Singhal** Thesis: *Effects of Temperature and Precipitation on Skid Resistance: A Dynamic Panel Model Approach*, Department of Construction Management, University of Houston, May 2015.
20. **Avinash Shevelly**
Thesis: *Impacts of Temperature and Precipitation on Network-Level Pavement Performance*, Department of Construction Management, University of Houston, May 2015.
19. **Wuling Liang**
Thesis: *Public Transit Customer Satisfaction Dimensions Discovery from Online Reviews*, Department of Construction Management, University of Houston, May 2015.

18. **Curt Webb**
Thesis: *Schedule Compression Impact on Construction Project Safety*, Department of Construction Management, University of Houston, May 2015
17. **Sam Jahanbakhsh**
Thesis: *Estimating Spatial Dependence Associated with Deterioration Process of Road Network*, Department of Construction Management, University of Houston, May 2015.
16. **Hussein Al-Furati**
Thesis: *A review of incentives effectiveness in EPC mega projects*, Department of Construction Management, University of Houston, May 2014
15. **Manish Solanki**
Thesis: *Risk aversion approach of site layout planning using ant colony optimization*, Department of Construction Management, University of Houston, May 2014.
14. **Rakshith Reddy**
Thesis: *Study of Short Term Skid Improvements by Light Texturing with a Milling Machine*, Department of Construction Management, University of Houston, May 2014
13. **Edward Villarreal**
Thesis: *Self-performing versus subcontracting analysis in the construction workplace*, Department of Construction Management, University of Houston, May 2013
12. **Arne Brennan**
Thesis: *Valuation of Certified Green Homes A Financial Perspective*, Department of Construction Management, University of Houston, May 2013
11. **Clay Hundley**
Thesis: *Knowledge Transfer in Research Lab Construction Projects: An Assessment of the M.D. Andersons Facility Asset Request Database*, Department of Construction Management, University of Houston, May 2013
10. **Schurle Anthony**
Thesis: *Business Process Management Development for Engineering, Procurement and Construction Projects*, Department of Construction Management, University of Houston, May 2013
9. **Mauricio Linares**
Thesis: *Lessons Learned and Knowledge Management in a Residential Owner - Builder Company*, Department of Construction Management, University of Houston, May 2013
8. **Eduardo Garcia**
Thesis: *Knowledge transfer in organizations undertaking Oil & Gas capital projects*, Department of Construction Management, University of Houston, May 2013
7. **David Tatum**
Thesis: *Social Media as a Median for Knowledge Sharing in the Construction Industry*, Department of Construction Management, University of Houston, May 2013
6. **Lori Bigler**
Thesis: *The Use of Reference Class Forecasting to Improve Estimate Accuracy in Construction Projects*, Department of Construction Management, University of Houston, May 2013
5. **Amir Hemmati**
Thesis: *Reviewing Deconstruction Credits in LEED, an Approach to Applying DfD in LEED-NC*, Department of Construction Management, University of Houston, May 2012

4. **Eva Lyon**

Thesis: *Construction close-out into the practice of facilities improving transition and integration of management for education institutions*, Department of Construction Management, University of Houston, May 2012

3. **Chris Thompson**

Thesis: *Best Practices & Barriers when Combining Lean Project Delivery and PEPc*, Department of Construction Management, University of Houston, May 2012

2. **Andrew Yahner**

Thesis: *Development of An Evaluation Tool for the Selection of BIM Coordinated Prefabrication and Modularization in the Healthcare Construction Industry*, Department of Construction Management, University of Houston, May 2012

1. **Mike Minh**

Thesis: *Evaluating Whether a Smartphone is a cost-effective solution for real-time expense tracking in small construction projects*, Department of Construction Management, University of Houston, May 2012.

10.2 Master Students (as thesis committee member)

3. **Venkata Vemuri**

Thesis: *Pavement Performance Models Calibration*, Department of Construction Management, University of Houston, May 2019.

2. **Mohammed Shamiyeh**

Thesis: *Application of Multi-Criteria Decision Making Methods on Pavement Performance*, Department of Civil Engineering, University of Qatar, December 2019.

1. **Shalaka Dhonde**

Thesis: *Structural Behavior of Sixty Degree Skew Reinforcing in Inverted-T Bent Caps in Bridges*, Department of Civil Engineering, University of Houston, August 2018.

10.3 Ph.D. Students (as dissertation committee member)

6. **Oscar Galvis** Dissertation: *Quantifying the Benefit-Cost Ratio (BCR) of establishing minimum skid resistance thresholds at the network level*, The University of Texas at Austin.

5. **Jingran Sun** Dissertation: ..., The University of Texas at Austin.

4. **Taehoon Lim** Dissertation: *Evaluating the criticality of highway infrastructure for highway asset management*, The University of Texas at Austin.

3. **Srijith Balakrishnan** Dissertation: *Constructing models and metrics for quantifying network-wide disruptions of extreme events*, The University of Texas at Austin.

2. **Juan Diego Porras-Alvarado**

Dissertation: *A Methodological Framework for Cross-Asset Resource Allocations to Support Infrastructure Management*, The University of Texas at Austin, May 2016.

1. **Guang Yang**

Dissertation: *Material laws of FRP strengthened reinforced concrete under uniaxial tension and biaxial tension-compression stress fields*, University of Houston, May 2015.

11 Awards

- Baker Hughes/Fluor Faculty Research Excellence Award (2014), University of Houston
- Graduate School Fellowship, 2010, The University of Texas at Austin
- Road Scholar Fellowship, 2011, International Road Federation (IRF)
- Best Paper Award, 2010, 6th Annual Inter-University Symposium on Infrastructure Management (AISIM6)
- Robert Herman Endowed Scholarship, 2009, The University of Texas at Austin
- Tan Qin Tuan Scholarship, 2004, Singapore Government