

October 2023 – March 2024

Publications

1. Shaju, A., Southward, S. C., and Ahmadian, M., Enhancing Autonomous Vehicle Navigation with a Clothoid-Based Lateral Controller, *Applied Sciences*, Volume 14, Issue 5, February 2024. (<https://doi.org/10.3390/app14051817>). (Virginia Tech)
2. Chen, Y., S. M. H. Mirzaei, Holton, C., Ahmadian, M., Development of An Optical Sensing System for the Detection of Lubricity Conditions on the Rail Gage Face, *International Journal of Rail Transportation*, February 2024. (<https://doi.org/10.1080/23248378.2024.2309618>). (Virginia Tech)
3. Chen, Y., Neighborgall, C., Zheng, X., and Ahmadian, M., Field Testing and Performance Evaluation of Roll Stability Control System of Double-trailer Trucks, *Vehicle System Dynamics*, accepted for publication, January 2024, pp. 1 – 20. (<https://doi.org/10.1080/00423114.2024.2304052>). (Virginia Tech)
4. Ahmadian, M., Chen, Y., Zhang, Z., Emergency collision avoidance maneuvers of multi-trailer articulated heavy vehicles, *Vehicle System Dynamics*, January 2024. (<https://doi.org/10.1080/00423114.2024.2305292>). (Virginia Tech)
5. Neighborgall, C., Chen, Y., and Ahmadian, M., Tyre lateral slip effect on off-tracking of a long combination vehicle, *Vehicle System Dynamics*, January 2024. (<https://doi.org/10.1080/00423114.2024.2304052>). (Virginia Tech)
6. Shaju, A., Southward, S. C., and Ahmadian, M., PID-Based Longitudinal Control of Platooning Trucks, *Machines*, Vol. 11, Issue 12, December 2023. (<https://doi.org/10.3390/machines11121069>). (Virginia Tech)
7. Zheng, X., Chen, Y., and Ahmadian, M., Interconnected Roll Stability Control System for Semitrucks with Double Trailers, *SAE Technical Paper No. 2023-01-0906*, 2023. (<https://doi.org/10.4271/2023-01-0906>). (Virginia Tech)
8. Soufiane, K., Zarembski, A. M. and Palese, J. W., Assessing the Impact of Deteriorating Adjacent Crossties on the Future Condition of a Central Crosstie: A Study Leveraging Unsupervised and Interpretable Machine Learning Techniques, submitted to *Journal of Infrastructure Systems*, November 2023. (University of Delaware)
9. Wang, Z., Zeng, Z., and Teng, H., Corrosion Test of the Steel Plate in a WJ-8 Fastener for High-Speed Rail, *Journal of Transportation Technologies*, Vol.14, Issue, 01, pp. 16-30, 2024. (UNLV)
10. Teng, H. and Kutela, B., Technical Feasibility Study of Passenger Rail Service along the West Route between Las Vegas and Los Angeles, *Journal of Transportation Technologies*, Vol. 13, Issue 4, pp. 746-755, 2023. (UNLV)
11. Mohammadi, A. Wang, Z., and Teng, H., Mechanical and Metallurgical Assessment of a Submerged Arc Surfaced Rail, submitted to the *Journal of Rail and Rapid Transit*, October 2023. (UNLV)
12. Mohammadi, A., Wang, Z., and Teng, H., Finite Element Analysis and Validation of Submerged Arc Welding for Repairing 136RE Heavy Rails, *International Journal of Transportation Science and Technology*, October 2023. (UNLV)

Other publications, conference papers and presentations

1. Chen, Y., Mirzaei, S. M. H., Holton, C., Ahmadian, M., Non-contact Detection and Evaluation of Rail Gage-face Lubricant using Optical Sensing Methods, the TTC Annual Conference, Pueblo, CO, November 7 – 8, 2023. (Virginia Tech)
2. Radmehr, A., Kumar, N., Ahmadian, M., Experimental Evaluation of Wheel/Rail Contact, Third Body Layer, and Surface Finish on Risk of Derailment,” the TTC Annual Conference, Pueblo, CO, November 7 – 8, 2023. (Virginia Tech)
3. Ahmadian, M., Safety Evaluation of Interconnected Roll Stability Control Systems for Articulated Commercial Vehicles, The 16th IFToMM World Congress, Tokyo, Japan, November 5 – 11, 2023. (Virginia Tech)
4. Kumar, N., Ahmad Radmehr, A. Ahmadian, M., Experimental Evaluation of Effect of Leaves on Railroad Tracks in Loss of Braking, The University Transportation Center's 2024 PSR Annual Congress, Moving Forward: Improving Transportation in Region 9, Las Vegas, Nevada, March 12, 2024. (Virginia Tech)
5. Chen, Y., Morteza S. Mirzaei, H., Holton, C., and Ahmadian, M., Application of Laser-induced Fluorescence Technique for Measuring Lubricity Conditions on Rail Gage Face, Presentation at the University Transportation Center's 2024 PSR Annual Congress, Moving Forward: Improving Transportation in Region 9, Las Vegas, Nevada, March 12, 2024. (Virginia Tech)
6. Kumar, N. Mantovani, G., and Ahmadian, M., Virginia Tech-Federal Railroad Administration Roller Rig Measurement Capabilities and Efforts to Improve its Capabilities, Presentation at the University Transportation Center's 2024 PSR Annual Congress, Moving Forward: Improving Transportation in Region 9, Las Vegas, Nevada, March 12, 2024. Virginia Tech)
7. Morteza, S., Mirzaei, H., Radmehr, A. Holton, C., and Ahmadian, M., Leveraging Non-contact Doppler LiDAR Sensors and Unsupervised Algorithms for In-motion Assessment of Railroad Track Stability, Presentation at the University Transportation Center's 2024 PSR Annual Congress, Moving Forward: Improving Transportation in Region 9, Las Vegas, Nevada, March 12, 2024. (Virginia Tech)
8. Ahmed, M. and Palese, J., Predicting Track Geometry Using Machine-Learning Methods, Presentations at Big Data in Railroad Maintenance Planning 2023, December 13-14, 2023, Newark Delaware. (University of Delaware)
9. Mohammed, O. and Palese, J., Development of a 3D Track Quality Index Incorporating Machine Learning Techniques and a Multivariable Normal Distribution. Presentations at Big Data in Railroad Maintenance Planning 2023, December 13-14, 2023, Newark Delaware. (University of Delaware)
10. Soufiane, K., The Effect of Adjacent Tie Condition on Wood Cross-tie Life, Presentations at Big Data in Railroad Maintenance Planning 2023, December 13-14, 2023, Newark Delaware. (University of Delaware)
11. Palese, J., Using Long Short-Term-Memory Networks and Mixture Density Modeling to Predict and Classify Track Geometry. Presentation at Cyber and Digitalinformation in Railway Engineering and Operations, University of Maryland, College Park, MD, March 7-8, 2024. (University of Delaware)
12. Soufiane, K., Zarembski, A.M., and Palese, J.W., Effect of Adjacent Poor Ties on the Life of Wood Crossties, The University Transportation Center's 2024 PSR Annual Congress, Moving Forward: Improving Transportation in Region 9, Las Vegas, Nevada, March 12, 2024. (University of Delaware)
13. Jia, J., Park, J.W., Zhu, M., Jiang, Y. and Teng, H., Acoustic Emission Technology Based Method Proposed for Real-time Rail Monitoring, The University Transportation Center's 2024

PSR Annual Congress, Moving Forward: Improving Transportation in Region 9, Las Vegas, Nevada, March 12, 2024. (UNLV)

14. Qiu, L., Zhu, M., Jiang, Y., and Teng, H., Development of Multi-Rotor-UAV-based Rail Track Irregularity Monitoring and Measuring Platform with Image and LIDAR Sensors, The University Transportation Center's 2024 PSR Annual Congress, Moving Forward: Improving Transportation in Region 9, Las Vegas, Nevada, March 12, 2024. (UNLV)
15. Zhu, M. and Jiang, Y., Development of a Platform to Enable Real time, Non-Disruptive Testing and Early Fault Detection of Critical High Voltage Transformers and Switchgears in High Speed Rail, The University Transportation Center's 2024 PSR Annual Congress, Moving Forward: Improving Transportation in Region 9, Las Vegas, Nevada, March 11-12, 2024. (UNLV)
16. Mohammadia, A., Wang, Z., and Teng, H., 3D Printing to Repair Worn Rail, The University Transportation Center's 2024 PSR Annual Congress, Moving Forward: Improving Transportation in Region 9, Las Vegas, Nevada, March 12, 2024. (UNLV)
17. Mohammadia, A., Wang, Z., and Teng, H., Finite Element Analysis of Submerged Arc Welding Process for Surface Repair of Heavy Rails, accepted for presentation and publication by the 19th International Conference on Automated People Movers and Automated Transit Systems, Atlanta, June 2024. (UNLV)