

ADITHYA THADURI

Personal Information

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Address : Lgh 1101, Blidvägen 64, Björkskatan, Luleå, Sweden, 97632
Present : Associate Senior Lecturer
Position : Researcher (Jan 2014 to Oct 2016), Division of Operation and Maintenance
Luleå University of Technology (LTU), Luleå, Sweden
Previous : Senior Research Fellow (Dec 2009-Mar 2013)
Position : Reliability Engineering-IIT Bombay, India

Educational Qualifications

PhD : Physics of Failure-Operation and Maintenance, Luleå University of Technology, Luleå. Sweden (2009-2013)
M.Tech : Reliability Engineering- IIT, Bombay, India (2007-2009)
B.Tech : Electronics and Instrumentation Engineering-Bapatla Engineering College, India (2003-2007)

Scientific Merits

Research : My present research areas are AI, Big Data and context-aware maintenance
Profile decision making within the framework of Maintenance 4.0 in Railways, asset maintenance analytics, prognostics and degradation modelling of railway infrastructure, reliability predictions, maintenance planning and optimization, RAMS, LCC and Risk assessment, predictive analytics of mining machines, and cybersecurity. The list of projects I was involved are:

1. EU – Linear Infrastructure Efficiency Improvement by Automated Learning And Optimised Predictive Maintenance Techniques (INFRAALERT)
2. EU - Innovative Intelligent Rail (IN2Rail)
3. EU - Intelligent Innovative Smart Maintenance of Assets by integrated Technologies (IN2Smart)
4. EU - FR8Rail - Development of Functional Requirements for Sustainable and Attractive European Rail Freight

5. NFFP6: Context-aware Decision Support for Operative Aircraft Maintenance
6. Trafikverket - Solar Storms on Railways
7. SKF - Context-aware maintenance decision making
8. MINDI - Predictive maintenance
9. BVFF - Simulation of railway track geometry and intelligent maintenance planning (SIMTRACK)
10. InfraSweden2030 - Underground pipelines and railway infrastructure - Failure consequences and restrictions
11. CorrSo - Novel Fault Detection Framework for Automated Systems: Hardware and Software

He has over 30 publications in the area of reliability and maintenance of components and systems

- Books :
- Writing a book on “Reliability and Safety engineering in electronic components and systems” with Prof A K Verma and Prof Uday Kumar, by Springer.
 - Contributed to the book written by Diego Galar Pascual, “Artificial Intelligence Tools: Decision Support Systems in Condition Monitoring and Diagnosis”
- List of Publications :
- Galar, D., Thaduri, A., Catelani, M., & Ciani, L. (2015). Context awareness for maintenance decision making : A diagnosis and prognosis approach. *Measurement*, 67, 137–150. <https://doi.org/10.1016/j.measurement.2015.01.015>
 - Galar, D., Thaduri, A., Kumar, U., & Pascual, R. (2016). SMART maintenance and prescriptive asset management for mining. Presented at the Mine Planning and Equipment Selection : 08/11/2015 - 13/11/2015. Retrieved from <http://urn.kb.se/resolve?urn=urn:nbn:se:ltu:diva-39497>
 - Galar, D., Thaduri, A., Simon, V., Catelani, M., & Ciani, L. (2016). Prognostic Hybrid Modelling from Data Fusion on Machine Tools. *Measurement*. Accepted. Retrieved from <http://urn.kb.se/resolve?urn=urn:nbn:se:ltu:diva-9859>
 - Garmabaki, A., Thaduri, A., Seneviratne, D., & Kumar, U. (2016). Opportunistic inspection planning for Railway eMaintenance. *IFAC-PapersOnLine*, 49(28), 197–202. <https://doi.org/10.1016/j.ifacol.2016.11.034>
 - Jiménez-Redondo, N., Calle-Cordón, Á., Kandler, U., Simroth, A., Morales, F. J., Reyes, A., ... Duarte, E. (2017). Improving linear transport infrastructure efficiency by automated learning and optimised predictive maintenance techniques (INFRAALERT). *IOP Conference Series*, 236. Published. <https://doi.org/10.1088/1757-899X/236/1/012105>
 - Kans, M., Galar, D., & Thaduri, A. (2016b). Maintenance 4.0 in Railway Transportation

Industry. In Proceedings of the 10th World Congress on Engineering Asset Management (WCEAM 2015) (pp. 317–331). https://doi.org/10.1007/978-3-319-27064-7_30

- Mishra, M., Odellius, J., Thaduri, A., Nissen, A., & Rantatalo, M. (2017). Particle filter-based prognostic approach for railway track geometry. *Mechanical Systems and Signal Processing*, 96, 226–238. <https://doi.org/10.1016/j.ymssp.2017.04.010>
- Mishra, M., & Thaduri, A. (2016). Ontology based diagnosis for maintenance decisions of Paper Mill roller using dynamic response. In *Current Trends in Reliability, Availability, Maintainability and Safety : An Industry Perspective* (pp. 187–196). https://doi.org/10.1007/978-3-319-23597-4_14
- Papic, L., Kovacevic, S., Galar, D., & Thaduri, A. (2016a). Investigation of Causes of Mining Machines Maintenance Problems. In *Current Trends in Reliability, Availability, Maintainability and Safety : An Industry Perspective* (pp. 283–299). https://doi.org/10.1007/978-3-319-23597-4_21
- Papic, L., Kovacevic, S., Galar, D., & Thaduri, A. (2016b). Safety Analysis of Mining Machines Specific Maintenance Operations. In *Current Trends in Reliability, Availability, Maintainability and Safety : An Industry Perspective* (pp. 485–496). https://doi.org/10.1007/978-3-319-23597-4_35
- Parida, A., Karim, R., & Thaduri, A. (2017). Guest Editorial. *Journal of Quality in Maintenance Engineering*, 23(3), 258–259. <https://doi.org/10.1108/JQME-05-2017-0039>
- Soltanali, H., Garmabaki, A. S., Thaduri, A., Parida, A., Kumar, U., & Rohani, A. (2018). Sustainable production process : An application of reliability, availability, and maintainability methodologies in automotive manufacturing. *Journal of Risk and Reliability*. Epub ahead of print. <https://doi.org/10.1177/1748006X18818266>
- Thaduri, A. (2019). Cybersecurity for eMaintenance in Railway Infrastructure : Risks and Consequences. *International Journal of Systems Assurance Engineering and Management*. In press. Retrieved from <http://urn.kb.se/resolve?urn=urn:nbn:se:ltu:diva-73186>
- Thaduri, A. (2013). Physics-of-failure based performance modeling of critical electronic components (PhD dissertation). Luleå. Retrieved from <http://urn.kb.se/resolve?urn=urn:nbn:se:ltu:diva-16877>
- Thaduri, A., & Famurewa, S. M. (2017). Processing mining for maintenance decision support. In *Proceedings of MPM 2016 : 6th International Conference on Maintenance Performance Measurement and Management*, 28 November 2016, Luleå, Sweden (p. 179). Luleå. Retrieved from <http://urn.kb.se/resolve?urn=urn:nbn:se:ltu:diva-63905>
- Thaduri, A., Famurewa, S. M., Verma, A. K., & Kumar, U. (2019). Process Mining for

Maintenance Decision Support. In System Performance and Management Analytics (pp. 279–293). https://doi.org/10.1007/978-981-10-7323-6_23

- Thaduri, A., Galar, D., & Kumar, U. (2015). Railway Assets : A Potential Domain for Big Data Analytics. *Procedia Computer Science*, 53, 457–467. <https://doi.org/10.1016/j.procs.2015.07.323>
- Thaduri, A., Galar, D., Kumar, U., & Verma, A. K. (2016). Context-Based Maintenance and Repair Shop Suggestion for a Moving Vehicle. In *Current Trends in Reliability, Availability, Maintainability and Safety : An Industry Perspective* (pp. 67–81). https://doi.org/10.1007/978-3-319-23597-4_6
- Thaduri, A., Kumar, U., & Verma, A. K. (2015). Comparison of failure characteristics of different electronic technologies by using modified physics-of-failure approach. *International Journal of Systems Assurance Engineering and Management*, 6(2), 198–205. <https://doi.org/10.1007/s13198-014-0301-y>
- Thaduri, A., Kumar, U., & Verma, A. K. (2017). Computational intelligence framework for context-aware decision making. *International Journal of Systems Assurance Engineering and Management*, 8(Supp. 4), 2146–2157. <https://doi.org/10.1007/s13198-014-0320-8>
- Thaduri, A., Verma, A. K., & Kumar, U. (2018). Analytics for Maintenance of Transportation in Smart Cities. In *Quality, IT and Business Operations : Modeling and Optimization* (pp. 81–91). Singapore. https://doi.org/10.1007/978-981-10-5577-5_7
- Thaduri, A., Verma, A., & Kumar, U. (Eds.). (2015). *Analytics for Maintenance of Transportation in Smart Cities*. Presented at the 7th International Conference on Quality, Reliability, Infocom Technology and Business Operations (ICQRITBO'2015), Delhi, India, Dec 28-30, 2015, Delhi. Retrieved from <http://urn.kb.se/resolve?urn=urn:nbn:se:ltu:diva-60615>
- Kour. R., Karim, R., & Thaduri, A. Railway Defender Kill Chain to Predict, Prevent and Detect Cyber-attacks. *Computers in Industry*. (Accepted)
- Soltanali, H., Garmabaki, A. S., Thaduri, A., Parida, A., & Rohani, A. Inspection methodologies for maintenance in production process (Accepted)
- Thaduri, A. & Mishra, M. Nowcast models for train delays based on the railway network status. *International Journal of Systems Assurance Engineering and Management* (Submitted)
- Thaduri, A., Galar, D., Kumar, U., Solar Storms: Impacts on railways and other transportation systems. (Submitted)
- Thaduri, A., Verma, A.K., Kumar, U., Maintenance of Railway Infrastructure using Cyber-Physical Systems. (Submitted)

Research : • Received Young Research Award on “Physics of Failure Approach” from

- Awards Patron at ICQRIT, 2011.
- Awards
- Awarded Gold medal from the Chief Minister of state, India in B.Tech for the achievement of GATE rank.
- Other Merits :
- Asst. Managing Editor, Int. Journal of Systems Assurance Engineering and Management (IJSAEM)
 - Reviewer: IJSAEM, International Journal of Reliability, Quality, Safety Engineering, Sensors, International Conference on Industrial Engineering and Engineering Management (IEEM), International Conference on Reliability, Engineering Safety and Hazard (ICRESH), eMaintenance,

Pedagogical Merits

- Courses : D7007B, Maintenance Engineering, Masters
MOOC, Maintenance Engineering, PhDs and Masters
Labview, CBM, Bachelors
- Supervision : Bachelor thesis: 2, Master thesis: 3
Doctoral Thesis: 5
Ravdeep Kour, 2019, Cybersecurity, Co-Supervisor
Jajati Jena, 2019, Safety in Tunnels, Co-Supervisor
Yashaswi Chauhan, 2019, Reliability of Electronics, Co-Supervisor
Amit Patwardhan, 2018, Big data management, Co-Supervisor
Piyush Das, 2020, Ship Maintenance and LCC, Co-Supervisor
- Teaching Material : Maintenance Engineering, Reliability Engineering, Electronic Reliability, Physics of Failure, Reliability Engineering, Condition Monitoring, Applied Reliability, Life Cycle Costing, Risk and Vulnerability, Safety Instrumented Systems, Fire Safety, Fire Risk Assessment

Additional Assignments

- Positions of Trust : Member: IEEE, ISTE, SRESA, IEEE 1413.1,