RESUME

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EDUCATIONAL QUALIFICATIONS

Degree	Institute	Year
PhD (Civil Engineering)	Jaypee University of Information Technology, Solan	**2019**
M.Tech. (Transportation Engineering)	National Institute of Technology, Kurukshetra (9.32 CGPA)	**2015**
B.Tech. (Civil Engineering)	JSS Academy of Technical Education, Noida	**2013**

RESEARCH INTERESTS

- Structural Evaluation of Roads (Falling Weight Deflectometer)
- ACN-PCN (ACR-PCR) Method of Airfield Evaluation using FWD
- Quality Audit of Highways
- Validation of Network Survey Vehicle (NSV)
- Road Asset Management Systems
- Highway Design and Maintenance Strategies
- Pavement Maintenance Management Systems
- Pavement Condition Assessment (Structural & Functional)
- Pavement Material Characterization
- Soft-Computing Techniques in Civil Engineering

SOFTWARE SKILLS

HDM-4, MATLAB, IIT PAVE, KGPBACK, SPSS.

PROFESSIONAL EXPERIENCE

Position	Institute/Organization	Nature of Projects	Year
Scientist	Central Road Research Institute (CSIR-CRRI), New Delhi	Research, Consultancy and Teaching	**Feb. 2021 - till date**
Assistant Professor	Jaypee University of Information Technology, Solan	Teaching and Research	**July 2016 – Feb. 2021**
Assistant Professor	ABES Institute of Technology, Ghaziabad	Teaching and Research	**June. 2015 - July 2016**
Research Intern	Central Road Research Institute (CSIR-CRRI), New Delhi	Research	**Dec. 2014- June 2015**

Research & Consultancy Projects (Completed/Ongoing) at CRRI.

Sl. No.	Project Title	Nature of Project & Role
1.	Development of Pavement Structural health Index for Network-level Evaluation of Flexible Pavements	In-house Research (Principal Investigator)
2.	Assessing the Suitability of Imperial Smelting Furnace Slag (ISFS) as a Construction Material in Flexible and Rigid Pavements	In-house Research (Principal Investigator)
3.	Quality Control Supervision and Post Construction Assessment of the wearing course of the Race Track at Buddh International Circuit, Greater Noida	Sponsored Research (Principal Investigator)
4.	Performance Evaluation of Road Constructed using Brick Aggregates in Sub-Base and Foam Bitumen in Base Layers	Grant-In-Aid Project (Co-Principal Investigator)
5.	Condition Assessment Using Modern Data Collection Techniques and Preparation of Annual Maintenance Plan using HDM-4 of Odhisa PWD Roads	Sponsored Research (Member)
6.	Study on Self-healing Performance of Bituminous Mixes using Microcapsule encapsulated Rejuvenators	In-house Research (Member)
7.	External technical/Quality and safety Audit of the16-lane carriageway in the stretches of UER-II (NH-344m&NH-344N) and Dwaraka Expressway(NH-248Bb), total 8 construction Packages under PIU, NHAI, Dwaraka, New Delhi	Sponsored Research (Member)
8.	Development of Airfield Pavement Management System (APMS) for Ten Airports of India	Consultancy Project (Member)
9.	Validation of Network Survey Vehicle for International Roughness Index and Mean Profile Depth	Consultancy Project (Member)
10.	Validation of Network Survey Vehicle System	Consultancy Project (Member)
11.	Structural Evaluation of Rouza Chauraha (Ghazipur)-Phephna (Balia) Section using FWD for strengthening recommendations (Package-2)	Consultancy Project (Member)
12.	Design of Flexible pavement for New Transport Nagar, Aligarh, Uttar Pradesh	Consultancy Project (Member)
13.	Technical Audit of Indore Gujarat Sections of NH-47 in MP State	Consultancy Project (Member)
14.	Capsule on Airfield Engineering	Consultancy Project (Member)
15.	Customized Training Programme on "Capsule on Airfield Engineering", for the officers of BRO, December 20-24, 2021.	Consultancy Project (Member)

PATENTS FILED

Sl. No.	Title of the Invention	Status
1.	Aggrandizing the mechanical behaviour and environmental benefit of Flexible Pavement using Imperial Smelting Furnace Slag (ISFS)	Complete Specifications filed
2.	Aggrandizing the mechanical behaviour and environmental benefit of Rigid Pavement using Imperial Smelting Furnace Slag (ISFS)	Complete Specifications filed

Membership in Professional Organizations (National/International)

1. Life membership of Indian Road Congress (IRC))
2. Life membership of Indian Geotechnical Society (IGS)

PUBLICATIONS

Journals (SCI/SCOPUS/Peer Reviewed)

1. **Gupta, A.**, Kumar, P., & Gowda, S. Advancing Flexible Pavement Structural Health Monitoring: A user-friendly Approach for Network-Scale Assessments. International Journal of Pavement Research and Technology (2023). https://doi.org/10.1007/s42947-023-00395-8 (ESCI).

2. **Gupta Aakash**, M G Prajwal, Gowda Sachin, R S Jaya, "Development of Correlation between Indirect Tensile Strength and Resilient Modulus for VG-40 Bituminous Concrete", Indian Highways, Indian Roads Congress, 2024 Vol 52, No. 1, pp. 17-27.

3. Gowda, S., Kunjar, V., **Gupta, A.** et al. Municipal incinerated solid waste bottom ash as sustainable construction material in the construction of flexible pavements. Journal of Material Cycles and Waste Management (2023). https://doi.org/10.1007/s10163-023-01809-2 (SCIE, Impact Factor - 3.1)

4. Gowda, S., Kavitha, G. & **Gupta, A**. Economic Analysis and Prioritisation of Non-core Roads in India: A Case Study. International Journal of Pavement Research and Technology (2022). https://doi.org/10.1007/s42947-022-00250-2 (ESCI)

5. **Gupta Aakash**, Kumar P., Gupta Ashok K. and Kumar Ashish , "Development of Road Roughness Model using Analytical Hierarchy Process for Rural Road Network in Himachal Pradesh", Indian Highways, Indian Roads Congress, 2020 Vol. 48, No. 11, pp. 23-33

6. **Gupta, Aakash**, Kumar, P., Gupta, A. K., Kumar, A., Rural Road Maintenance Prioritization Index Based on Functional and Structural Parameters for Rural Road

Network in Himachal Pradesh, Indian Highways, April 2021, Indian Roads Congress, Vol 49, No. 04, pp 16-27.

7. Gowda S, Kunjar V, **Gupta A**, Kavitha G, Shukla BK, Sihag P. Prediction of the Subgrade Soil California Bearing Ratio Using Machine Learning and Neuro-Fuzzy Inference System Techniques: A Sustainable Approach in Urban Infrastructure Development. *Urban Science*. 2024; 8(1):4. https://doi.org/10.3390/urbansci8010004 (SCIE Impact Factor - 2.0)

Book Chapters

1. B.K. Shukla, **A. Gupta**, S. Gowda, et al., Constructing a greener future: A comprehensive review on the sustainable use of fly ash in the construction industry and beyond, Materials Today: Proceedings (2023), https://doi.org/10.1016/j.matpr.2023.07.179, (Scopus Indexed).

2. Kumar, P., Gowda, S., **Gupta, A.** (2024). Implementation of Airfield Pavement Management System in India. In: Dhamaniya, A., Chand, S., Ghosh, I. (eds) Recent Advances in Traffic Engineering. RATE 2022. Lecture Notes in Civil Engineering, vol 377. Springer, Singapore. https://doi.org/10.1007/978-981-99-4464-4_37 (Scopus Indexed).

3. Gowda, S., Vaishakh, K., **Gupta, A.,** Prakash, R., Kavitha, G. (2024). Modeling of Deflection Basin Parameters of Asphalt Pavements Using Artificial Neural Networks and Adaptive Neuro-Fuzzy Inference Systems. In: Singh, D., Maji, A., Karmarkar, O., Gupta, M., Velaga, N.R., Debbarma, S. (eds) Transportation Research. TPMDC 2022. Lecture Notes in Civil Engineering, vol 434. Springer, Singapore. https://doi.org/10.1007/978-981-99-6090-3_2 (Scopus Indexed).

4. Singh Yadav, S., **Gupta, A.,** Gowda, S., Aggarwal, Y. (2024). Development of Maintenance Priority Index for Urban Road Network. In: Singh, D., Maji, A., Karmarkar, O., Gupta, M., Velaga, N.R., Debbarma, S. (eds) Transportation Research. TPMDC 2022. Lecture Notes in Civil Engineering, vol 434. Springer, Singapore. https://doi.org/10.1007/978-981-99-6090-3_1 (Scopus Indexed).

International and National Conferences:

1. **Aakash Gupta**, Sachin Gowda, Sampath Kumar Pasupunuri; Prediction of Modified Structural Number for Asphalt Pavements Using Machine Learning Algorithms, Transportation Research Board, 103rd Transportation Research Board (TRB) Annual Meeting, Washington, DC, January 7–11, 2024.

2. Sachin Gowda, Nandan C S, M A Jayaram, **Aakash Gupta**, Sampath Kumar Pasupunuri and Jays R S; Machine Learning-Based Ensemble Techniques for Optimal Prediction of Pavement Condition, Transportation Research Board, 103rd Transportation Research

Board (TRB) Annual Meeting, Washington, DC, January 7–11, 2024.

3. **Aakash Gupta**, Sachin Gowda, Nandan C S, G Kavitha; Machine Learning Approach for Deflection Bowl Parameter Prediction in Flexible Pavements: A Random Forest Algorithm-Based Study, 7th Conference of the Transportation Research Group of India (CTRG-2023) between 17th to 20th December, Surat, India.

4. Sachin Gowda, Nandan C S, M A Jayaram, **Aakash Gupta**, G Kavitha; Unsupervised Clustering of Asphalt Pavement Conditions with Principal Component Analysis Aided Dimensionality Reduction, 7th Conference of the Transportation Research Group of India (CTRG-2023) between 17th to 20th December, Surat, India.

5. Sachin Gowda, Prakash R, G Kavitha, and **Aakash Gupta**; Comparison Study on Various Backcalculation Techniques for Estimating the Resilient Modulus of Asphalt Pavement Layers, 9th Conference on Transportation Systems Engineering and Management (CTSEM 2023) between October 12-14, 2023 Organised by National Institute of Technology Warangal, India.

6. G Kavitha, Junaid Savanur, Sachin Gowda and **Aakash Gupta**; Alternative Proposal to Intersection Design connecting National Highway-48 Belgaum: A case study, 9th Conference on Transportation Systems Engineering and Management (CTSEM 2023) between October 12-14, 2023 Organised by National Institute of Technology Warangal, India.

7. G Kavitha, Nandini N, Sachin Gowda, and **Aakash Gupta**; Experimental Studies on Bitumen Modified with Crumb Rubber in the Laboratory, 9th Conference on Transportation Systems Engineering and Management (CTSEM 2023) between October 12-14, 2023 Organised by National Institute of Technology Warangal, India.

8. G Kavitha, Varun T M, Kiran M, Sachin Gowda, and **Aakash Gupta**; Exploring Cement-Treated Base Layers: Laboratory Performance and Economic Viability in Road Pavements, 9th Conference on Transportation Systems Engineering and Management (CTSEM 2023) between October 12-14, 2023 Organised by National Institute of Technology Warangal, India.

9. G Kavitha, Prathap S, Abhishek G Malji, Sachin Gowda and **Aakash Gupta**; Geometric Design and Cloverleaf Intersection Planning for a 14.8 Km 6-Lane Greenfield Highway in Bhandara, Maharashtra, 9th Conference on Transportation Systems Engineering and Management (CTSEM 2023) between October 12-14, 2023 Organised by National Institute of Technology Warangal, India.

10. Sachin Gowda, Nandan C S, M A Jayaram, **Aakash Gupta**, and Jays R S; Unsupervised Clustering of Asphalt Pavement Conditions using Fuzzy C-Means Algorithm with

Principal Component Analysis Aided Dimensionality Reduction, International Conference on MAchine inTelligence for Research & Innovations (MAiTRI-2023 Summit) 01 – 03 September 2023 (Hybrid Mode), organized by NIT Jalandhar.

11. Sachin Gowda, Pramod Kumar, Niranjan A S, **Aakash Gupta**, and G Kavitha; Influence of Recycled Asphalt and Rejuvenated Recycled Asphalt on Mechanical Performance and Chemical Makeup of Asphalt Binder, International Conference on Creative and Innovative Solutions in Civil Engineering (CISCE-2023) August 11-12th, 2023 (Hybrid Mode), organized by MNIT Jaipur.

12. Sachin Gowda, Niranjan A S, **Aakash Gupta**, and G Kavitha; Analysis of Rutting Behaviour of Recycled Asphalt Binder and Rejuvenated Recycled Asphalt Binder by Multiple Stress Creep Recovery (MSCR) Test, International Conference on Creative and Innovative Solutions in Civil Engineering (CISCE-2023) August 11-12th, 2023 (Hybrid Mode), organized by MNIT Jaipur.

13. **Aakash Gupta**, Prajwal M G, Sachin Gowda; Evaluating the Performance of Gradient Boosted Trees in Predicting Flexible Pavement Deflection Parameters, International Conference on Creative and Innovative Solutions in Civil Engineering (CISCE-2023) August 11-12th, 2023 (Hybrid Mode), organized by MNIT Jaipur.

14. Pramod Kumar, Sachin Gowda, Saraswati Setia, **Aakash Gupta**, Sunil Jain; Rejuvenated RAP Binder Blends' Fatigue and Healing Characteristics, International Conference on Recent Trends in Engineering and Science (RTES-2023), 2nd – 3rd May 2023 conducted by, Sardar Vallabhbhai National Institute of Technology, Surat.

15. Pramod Kumar, Sachin Gowda, Saraswati Setia, **Aakash Gupta**, and Sunil Jain; Review of Self Healing Asphalt Materials and their Evaluation Indices, National Conference on Sustainable Development of Smart Cities Infrastructure' (SDSCI–2023) during May 27–28, 2023 conducted by, National Institute of Technology Kurukshetra.

16. Bishnu Kant Shukla, **Aakash Gupta**, Sachin Gowda, Yuvraj Srivastav; Recycling fly ash as a construction material: An environmentally sustainable approach [UCC-2023-136], Proceedings of the International UKIERI Concrete Congress held at Dr B R Ambedkar National Institute of Technology Jalandhar, Punjab, India, on 14 - 17 March 2023 (Virtual Mode).

17. Bishnu Kant Shukla, **Aakash Gupta**, Sachin Gowda, Sumit Rawat; Incorporation of non conventional aggregates in concrete-a comprehensive review [UCC-2023-137], Proceedings of the International UKIERI Concrete Congress held at Dr B R Ambedkar National Institute of Technology Jalandhar, Punjab, India, on 14 - 17 March 2023 (Virtual Mode).

18. Sachin Gowda, **Aakash Gupta**, Vaishakh K, G Kavitha; Modeling asphalt pavement

condition using artificial neural networks and adaptive neural fuzzy inference system approaches, Advances in Materials and Pavement Performance Prediction (AM3P) 22-24 May 2023, Hong Kong. (Accepted)

19. **Aakash Gupta**, Pradeep Kumar, Sachin Gowda; A Simplified Tool for Flexible Pavement Structural Health Assessment at Network Level, Advances in Materials and Pavement Performance Prediction (AM3P) 22-24 May 2023, Hong Kong. (Accepted)

20. Sachin Gowda, Vaishakh K, **Aakash Gupta**, G Kavitha; Assessing the suitability of Municipal Solid Waste Incineration-Bottom Ash as a construction material in flexible pavements, International Airfield & Highway Pavements Conference (ASCE), Austin, Texas. 14-17 June 2023. (Accepted)

21. Sachin Gowda, Vaishakh K, **Aakash Gupta**, Pradeep Kumar, G Kavitha; Effectiveness of Adaptive Neuro-fuzzy Inference Systems in modeling the deflection bowl parameters of asphalt pavements, International Airfield & Highway Pavements Conference (ASCE), Austin, Texas. 14-17 June 2023. (Accepted).

22. Pradeep Kumar, Manoranjan Parida, **Aakash Gupta**, and Sachin Gowda; Pavement Management System for Maintenance of Airfield Pavement Network in India, International Airfield & Highway Pavements Conference (ASCE), Austin, Texas. 14-17 June 2023. (Accepted)

23. Sachin Gowda, Vaishakh K, **Aakash Gupta**, Prakash R and G Kavitha; Modeling of deflection basin parameters of asphalt pavements using Artificial Neural Networks and Adaptive Neuro fuzzy Inference Systems, 14th International Conference on Transportation Planning and Implementation Methodologies for Developing Countries (TPMDC), IIT Bombay, 19-21 December 2022.

24. Saurabh Singh Yadav, **Aakash Gupta**, Sachin Gowda, Yogesh Agarwal; Development of Maintenance Priority Index for Urban Road Network, 14th International Conference on Transportation Planning and Implementation Methodologies for Developing Countries (TPMDC), IIT Bombay, 19-21 December 2022.

25. Sachin Gowda, Vaishakh K, **Aakash Gupta**, G Kavitha; Application of Artificial Neural Networks and Adaptive Neural Inference System approaches in Modeling of Asphalt Pavement Condition, 7th International Conference on Soft Computing: Theory and Applications, SoCTA, Himachal Pradesh University, Shimla, India. 16-18 December 2022.

26. Sachin Gowda, Prakash b, **Aakash Gupta** and G Kavitha; Study on Analysis of Co-Relation between Various Algorithms used for Back-Calculating the Elastic Modulus of Asphalt Pavement, 2nd International Conference on Construction materials and Structures (Virtual Mode) ICCMS 2022, Department of Civil Engineering, National Institute of

Technology Calicut (Kerala, India), 14-18 December 2022.

27. Pradeep Kumar, Sachin Gowda, **Aakash Gupta**; Implementation of Airfield Pavement Management System in India, Fourth National Conference on Recent Advances in Traffic Engineering (RATE-2022), SVNIT Surat, Gujarat, India. 11-12th November 2022.

28. Prakash R, Sachin Gowda, **Aakash Gupta**, G Kavitha, and Pradeep Kumar; Comparative study on backcalculated and laboratory-measured modulus of asphalt pavement layer using various algorithms, ICIET 2022 (International Conference on Innovations in Engineering and Technology), Hyderabad. 15-17th September 2022.

29. Sachin Gowda, Vaishakh K, **Aakash Gupta**, Pradeep Kumar, G Kavitha, Bishnu Kant Shukla; Modeling of Subgrade soil CBR using Artificial Neural Networks and Adaptive Neuro-Fuzzy Inference System- ICFMMP-2022 (3rd International Conference on Functional Materials, Manufacturing, and Performances), 29-30 July 2022 (Virtual event).

30. Saurabh Singh Yadav, **Aakash Gupta**, Sachin Gowda, Dr. Yogesh Agarwal, Dr. Pratibha Aggarwal, Development of Pavement Maintenance Priority Index (Poster Presentation), 10th NATIONAL CONFERENCE ON NANOSCIENCE AND INSTRUMENTATION TECHNOLOGY, July 09-10, 2022, National Institute of Technology Kurukshetra.

31. Singh Y, S., **Gupta, A**., Agarwal, Y., Kumar, P., Gowda MK, S., A comparative study on overall priority indices for Flexible Pavement network", Smart and Sustainable Development of Urban Green Infrastructure in India and Canada, 25 – 26th March 2022, at NIT Trichy.

Students Guided (Completed/Ongoing)

Sl. No.	Name of the Student	Academic Institute	Dissertation Title
1.	Saurabh Yadav (MTech)	NIT Kurukshetra	Development of Maintenance Priority Index for Urban Road Network
2.	Prajwal M G (Mtech)	RASTA, Bangalore	Development of Correlation between Indirect Tensile Strength (ITS) and Resilient Modulus (MR) for Bituminous Concrete.