


Curriculum Vitae

PERSONAL DETAILS:

Name and Current Designation	:	Rupesh Kumar Tipu Assistant Professor K. R. Mangalam University Sohna, Gurugram Haryana 122103	
Mobile No.	:	+91-8802281783	
E-Mail ID	:	tipu0003@gmail.com	
Language	:	Hindi, English, Gujarati, Maithili	
Total Teaching experience	:	10+ Years	
Total Industrial experience	:	4+ Years (Including Structural Designing)	
ORCID ID	:	https://orcid.org/0000-0001-8476-8364	
ResearchGate	:	https://www.researchgate.net/profile/Rupesh-Kumar-Tipu?ev=hdr_xprf	
Google scholar	:	https://scholar.google.com/citations?user=uZzLU8IAAAJ&hl=en&oi=ao	
WoS	:	https://www.webofscience.com/wos/author/record/AFC-1290-2022	

EDUCATIONAL QUALIFICATIONS:

- **GATE-2017 (CE) Qualified**

Sr. no	Degree	University	Result	Year of passing	Specialization
1	Ph. D. (Full-Time)	CHARUSAT University Anand, Gujarat	Awarded	2024	Structural Engineering (ML based Predictive Modelling)
2	M. Tech.	MDU, Rohtak	74.81 %	2016	Structural Engineering
3	B. Tech.	MDU, Rohtak	69.66%	2013	Civil Engineering

TITLE OF Ph. D.

- **“DEVELOPMENT OF ARTIFICIAL INTELLIGENCE (AI) BASED PREDICTIVE MODEL AND COMPUTATIONAL OPTIMIZATION OF CONCRETE PROPERTIES”.**

PROFESSIONAL EXPERIENCE:**1. Academic Experience (Teaching)**

Sr. no.	Organization	Positions held	From	To	Duration
1	K. R. Mangalam University, Gurugram, Haryana	Assistant Professor	15/02/2023	Till date	1+ Year
2	CHARUSAT University, Changa (Anand), Gujarat	Research Scholar cum Teaching Assistant	05/11/2019	31/12/2022	3 Years
3	BITS EDU CAMPUS Vadodara, Gujarat	Assistant Professor	04/08/2017	22/05/2019	1 Years, 9 Months
4	KJIT CAMPUS Savli (Vadodara), Gujarat	Assistant Professor	01/02/2016	03/08/2017	1 Years, 6 Months
5	DITMR Faridabad, Delhi-NCR	Lecturer	01/02/2013	01/06/2014	1 Years, 4 Months

2. Industry and Structural Designing Experience

Sr. no.	Organization	Positions held	From	To	Duration
1	CHARUSAT University, Changa (Anand), Gujarat	Structural Designer	05/11/2019	31/12/2022	03 Years
2	IVRCL LTD.	Internship	15/06/2013	30/07/2013	6 Weeks
3	AMRAPALI PRINCELY ESTATE PVT. LTD.	Internship	28/06/2011	12/08/2011	6 Weeks

AREA OF INTEREST:

- **Currently Teaching and Mentoring B. Tech. (CSE) and MCA students**
- **Subjects Taught/Teaching (CSE):** Python Language, Natural Language Processing, Machine Learning, Deep Learning, Web programming using Python and JavaScript including HTML, CSS, SASS, Git, GitHub etc.
- **Subjects Taught/Teaching (Civil Engineering):** Structural Design, Structural Analysis, Soil Mechanics, Transportation Engineering, Concrete Technology, and Surveying.
- **Civil engineering software skills:** Staad Pro, ETABS, AutoCAD, 3ds Max.
- Designed many buildings as structural design engineer.
- Corporate Member of The Institution of Engineers (India) [IEI]

SKILLS

- Python, Django
- ASP.NET Core
- MATLAB (Learning)
- JavaScript
- Node.js
- Angular.js
- HTML
- CSS
- Machine Learning
- Deep Learning
- Natural Language Processing
- Website Development (Full Stack)
- Conventional Optimization
- Computational Optimization: PSO, GA, MOPSO, NSGA
- Hyperparameters Optimization of ML models

Research Publications Summary			
Type	Total	Scopus	SCIE
Research Paper	15	11	4
Book Chapter	3	2	NA
Conference	3	2	1 (WoS)
Book (International)	30	NA	NA
Patent	5 (Published)		
Research Proposal	2 (Submitted)		

Under Review	
Type	Total
Research Paper	9 SCIE, 1 Scopus
Conference	9 Accepted in IEEE conference

ADDITIONAL KEY RESPONSIBILITIES AT KRMU

- **MOODLE** (LMS) School coordinator
- **NAAC Criteria 1** Head (School Level)
- Member of **Center of Excellence** (AI & Robotics)
- **Placement** coordinator (School Level)
- **Mini-project** coordinator 2nd Year Students (School Level)
- Coordinator of **Curriculum review committee** for Year 2024-24

PUBLICATIONS:

Sr. No.	Authors	Publication Type	Title	Publication	Volume	Number	Pages	Year	Publisher	Indexing/IF
1	Tipu, Rupesh Kumar; Panchal, VR; Pandya, KS;	Research Article	An ensemble approach to improve BPNN model precision for predicting compressive strength of high-performance concrete	Structures	45		500-508	2022	Elsevier	SCIE (Q2), Scopus IF – 4.1
2	Singh, Rupesh Kumar;	Research Article	Study of Soil Cement with Admixture Stabilization for Road Sub-Grade	Pan	16	1	98.7	2017		NA
3	Tipu, Rupesh Kumar; Suman; Batra, Vandna;	Research Article	Development of a hybrid stacked machine learning model for predicting compressive strength of high-performance concrete	Asian Journal of Civil Engineering	24	8	2985-3000	2023	Springer International Publishing Cham	Scopus (Q3)

4	Tipu, Rupesh Kumar; Panchal, VR; Pandya, KS;	Research Article	Multi-objective optimized high-strength concrete mix design using a hybrid machine learning and metaheuristic algorithm	Asian Journal of Civil Engineering	24	3	849-867	2023	Springer	Scopus (Q3)
5	Tipu, Rupesh Kumar; Suman; Batra, Vandna;	Research Article	Enhancing prediction accuracy of workability and compressive strength of high-performance concrete through extended dataset and improved machine learning models	Asian Journal of Civil Engineering	25	1	197-218	2024	Springer International Publishing Cham	Scopus (Q3)

6	Tipu, Rupesh Kumar; Panchal, VR; Pandya, KS;	Research Article	Enhancing chloride concentration prediction in marine concrete using conjugate gradient-optimized backpropagation neural network	Asian Journal of Civil Engineering	25	1	637-656	2024	Springer International Publishing Cham	Scopus (Q3)
7	Tipu, Rupesh Kumar; Batra, Vandna; Suman; Panchal, VR; Pandya, KS;	Research Article	Predictive modelling of surface chloride concentration in marine concrete structures: a comparative analysis of machine learning approaches	Asian Journal of Civil Engineering	25	2	1443-1465	2024	Springer International Publishing Cham	Scopus (Q3)
8	Tipu, Rupesh Kumar; Batra, Vandna; Pandya, KS; Panchal, VR;	Research Article	Shear capacity prediction for FRCM-strengthened RC beams using Hybrid ReLU-Activated BPNN model	Structures	58		105432	2023	Elsevier	SCIE (Q2), Scopus IF – 4.1

9	Kumar, Rahul; Rathore, Ayush; Singh, Rajwinder; Mir, Ajaz Ahmad; Tipu, Rupesh Kumar; Patel, Mahesh;	Research Article	Prognosis of flow of fly ash and blast furnace slag-based concrete: leveraging advanced machine learning algorithms	Asian Journal of Civil Engineering			Jan-15	2023	Springer International Publishing Cham	Scopus (Q3)
10	Tipu, Rupesh Kumar; Batra, Vandna; Pandya, KS; Panchal, VR;	Research Article	Efficient compressive strength prediction of concrete incorporating recycled coarse aggregate using Newton's boosted backpropagation neural network (NB-BPNN)	Structures	58		105559	2023	Elsevier	SCIE (Q2), Scopus IF – 4.1
11	Tipu, Rupesh Kumar; Batra,	Research Article	Enhancing load capacity prediction of column using	Structures	58		105600	2023	Elsevier	SCIE (Q2), Scopus IF – 4.1

	Vandna; Pandya, KS; Panchal, VR;		eReLU- activated BPNN model							
12	Tipu, Rupesh Kumar; Arora, Rishabh; Kumar, Kaushal;	Research Article	Machine learning- based prediction of concrete strength properties with coconut shell as partial aggregate replacement: A sustainable approach in construction engineering	Asian Journal of Civil Engineerin g	25	3	2979- 2992	202 4	Springer Internatio nal Publishing Cham	Scopus (Q3)
13	Tipu, Rupesh Kumar; Panchal, VR; Pandya, KS;	Research Article	Machine learning- based prediction of concrete strengths with coconut shell as partial coarse aggregate replacement: a comprehensiv e analysis and	Asian Journal of Civil Engineerin g			Jan-18	202 4	Springer	Scopus (Q3)

			sensitivity study							
14	Kumar, Kaushal; Arora, Rishabh; Tipu, Rupesh Kumar; Dixit, Saurav; Vatin, Nikolai; Arya, Sandeep;	Research Article	Influence of machine learning approaches for partial replacement of cement content through waste in construction sector	Asian Journal of Civil Engineering			Jan-13	2024	Springer	Scopus (Q3)
15	Tipu, Rupesh Kumar; Batra, Vandna; Suman;	Research Article	Predictive modeling of shear strength in fiber-reinforced cementitious matrix-strengthened RC beams using machine learning	Asian Journal of Civil Engineering			01-Nov	2024	Springer International Publishing Cham	Scopus (Q3)

16	Tipu, Rupesh Kumar; Panchal, VR; Pandya, KS;	Conference	Prediction of concrete properties using machine learning algorithm	Journal of physics: conference series	2273	1	12016	2022	IOP Publishing	Scopus
17	Agarwal, Rupanshi ; Pathak, Paresh; Tipu, Rupesh Kumar; Singh, Digvijay; Kalnawat, Aarti; Dhabliya, Dharmesh;	Conference	ANN-Based Scalable Video Encoding Method for Crime Surveillance-Intelligence of Things Applications	2023 International Conference on Data Science and Network Security (ICDSNS)			01-Jul	2023	IEEE	Scopus, WoS
18	Arora, Rishabh; Kumar, Kaushal; Dixit, Saurav; Tipu, Rupesh Kumar; Kaul, Padmini; Chauhan, Swati;	Conference	Parametric investigation of coconut shells as partial replacement of coarse aggregates in sustainable concrete	E3S Web of Conferences	430		1180	2023	EDP Sciences	Scopus

	Raju, Y Kamala; Nijhaw n, Ginni; Haindavi, P;									
19	Tipu, Rupesh Kumar; Panchal, VR; Pandya, KS;	Book Chapter	Multi- objective optimization of the concrete mixture blended with mineral admixture using machine learning and NSGA-II algorithms	Advanced Engineerin g Optimizati on Through Intelligent Technique s: Select Proceeding s of AEOTIT 2022			165- 174	202 3	Springer Nature Singapore	Scopus
20	Raghav, Yogita Yashveer ; Tipu, Rupesh Kumar; Bhakhar, Ruchika; Gupta, Tanu; Sharma, Kriti;	Book Chapter	The Future of Digital Marketing: Leveraging Artificial Intelligence for Competitive Strategies and Tactics	The Use of Artificial Intelligenc e in Digital Marketing: Competitiv e Strategies and Tactics			249- 274	202 4	IGI Global	NA

21	Tipu, R.K., Batra, V., Suman <i>et al.</i>	Research Article	Optimizing compressive strength in sustainable concrete: a machine learning approach with iron waste integration	Asian Journal of Civil Engineering					Springer Nature	Scopus https://doi.org/10.1007/s42107-024-01061-5
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Sr. No.	Book Title	Authors	Publisher	ISBN	Year of Publication	Link
1	Predictive Modeling in Civil Engineering: An Introduction	Rupesh Kumar Tipu	Lambert Academic Publishing	978-620-7-47289-5	2024	https://www.morebooks.shop/shop-ui/shop/book-launch-offer/ab1d81af71e31d441c1f5d7922f7533993515117
2	Data-driven Approaches in Civil Engineering Predictions	Rupesh Kumar Tipu	Lambert Academic Publishing	978-620-7-47309-0	2024	https://www.morebooks.shop/shop-ui/shop/book-launch-offer/6f9d4df04df950c4122c38df7eb2d8105eeca232
3	Python Essentials: A Compact Guide for Practitioners	Rupesh Kumar Tipu	Lambert Academic Publishing	978-620-7-47345-8	2024	https://www.morebooks.shop/shop-ui/shop/book-launch-offer/4eb594ccd5bf718a26f1fbca953d01eef571b6fd
4	Scikit-Learn Mastery: Hands-On Machine Learning	Rupesh Kumar Tipu	Lambert Academic Publishing	978-620-7-47348-9	2024	https://www.morebooks.shop/shop-ui/shop/book-launch-offer/4985e98f74b11f1c7b136c1b01e6869f42a23a02
5	TensorFlow Workshop: Deep Learning in Action	Rupesh Kumar Tipu	Lambert Academic Publishing	978-620-7-47349-6	2024	https://www.morebooks.shop/shop-ui/shop/book-launch-offer/97e42ea056e010011e2d4b263dc046e7270d6ece
6	Web Development Simplified: Django Essentials	Rupesh Kumar Tipu	Lambert Academic Publishing	978-620-7-47350-2	2024	https://www.morebooks.shop/shop-ui/shop/book-launch-offer/14b1c77671497756417e089df52b3a30694a63bb
7	Web Design Essentials: Crafting Beautiful Experiences with HTML, CSS, & JavaScript	Rupesh Kumar Tipu	Lambert Academic Publishing	978-620-7-47408-0	2024	https://www.morebooks.shop/shop-ui/shop/book-launch-offer/8b4d682195be8c5f13410d143b6fefb50491f3ad
8	Efficient Coding with Python: Mastering Optimization Techniques	Rupesh Kumar Tipu	Lambert Academic Publishing	978-620-7-47409-7	2024	https://www.morebooks.shop/shop-ui/shop/book-launch-offer/

						offer/bd23770dd3ff296fe64c90e3634dd1af51d7f57b
9	Full-Stack Foundations: Django and JavaScript Integration	Rupesh Kumar Tipu	Lambert Academic Publishing	978-620-7-47410-3	2024	https://www.morebooks.shop/shop-ui/shop/book-launch-offer/0b55deafe94e84db8a5f16dd573fb547971e308
10	Python and NLP: Building Intelligent Applications	Rupesh Kumar Tipu	Lambert Academic Publishing	978-620-7-47466-0	2024	https://www.morebooks.shop/shop-ui/shop/book-launch-offer/89a3eeec85dbbf3e22cd0282f9e5ed214a64c3e
11	The Art of Lightweight Programming: Streamlined Web Development	Rupesh Kumar Tipu	Lambert Academic Publishing	978-620-7-47467-7	2024	https://www.morebooks.shop/shop-ui/shop/book-launch-offer/7463309c77f380697e151eaf3ec2e6a0cd9d2d4b
12	Practical Python AI: From Basics to Advanced NLP Techniques	Rupesh Kumar Tipu	Lambert Academic Publishing	978-620-7-47468-4	2024	https://www.morebooks.shop/shop-ui/shop/book-launch-offer/66c601cf3f4184710621757449d340bda0141663
13	Python at the Core: Machine Learning & Beyond	Rupesh Kumar Tipu	Lambert Academic Publishing	978-620-7-47469-1	2024	https://www.morebooks.shop/shop-ui/shop/book-launch-offer/449faa74dfa151338772ea9d61e7b2dfe8e78cba
14	Optimizing Neural Networks with Python	Rupesh Kumar Tipu	Lambert Academic Publishing	978-620-7-47470-7	2024	https://www.morebooks.shop/shop-ui/shop/book-launch-offer/eff92607daaee5804ce6115718d1643fa99864d6
15	Intelligent Web Development: Merging NLP & Machine Learning	Rupesh Kumar Tipu	Lambert Academic Publishing	978-620-7-47473-8	2024	https://www.morebooks.shop/shop-ui/shop/book-launch-offer/039cae320b395c8f86688765d224a0a8ff031116
16	C++ Mastery: Unleashing the Power of Modern Programming	Rupesh Kumar Tipu	Lambert Academic Publishing	978-620-7-47538-4	2024	https://www.morebooks.shop/shop-ui/shop/book-launch-offer/5454c3bcb89b75a1c85ced55f6df975f99ad0664

17	JavaScript Essentials: From Basics to ES6 and Beyond	Rupesh Kumar Tipu	Lambert Academic Publishing	978-620-7-47541-4	2024	https://www.morebooks.shop/shop-ui/shop/book-launch-offer/1a6e4dc9f2afa4514d3061f48654fb1fcd286d1c
18	Elegant HTML: Crafting Structured Web Content	Rupesh Kumar Tipu	Lambert Academic Publishing	978-620-7-47542-1	2024	https://www.morebooks.shop/shop-ui/shop/book-launch-offer/65bf249f7664ca5d1c7aed7c7392d4b0e41aa1b2
19	CSS Artistry: A Visual Guide to Innovative Design	Rupesh Kumar Tipu	Lambert Academic Publishing	978-620-7-47543-8	2024	https://www.morebooks.shop/shop-ui/shop/book-launch-offer/102c5df90954e421085a2527044214014b9569cc
20	The Android Architect: Building Cutting-Edge Apps	Rupesh Kumar Tipu	Lambert Academic Publishing	978-620-7-47544-5	2024	https://www.morebooks.shop/shop-ui/shop/book-launch-offer/f570555b2d412b0ba2e0c3b613f70f0f8446056b
21	C++ Concurrency in Action: Real-World Multithreading	Rupesh Kumar Tipu	Lambert Academic Publishing	978-620-7-47545-2	2024	https://www.morebooks.shop/shop-ui/shop/book-launch-offer/72bea33e2197a63929b6d7455dae3943edee6fa4
22	JavaScript Frameworks Explored: Angular, React, and Vue	Rupesh Kumar Tipu	Lambert Academic Publishing	978-620-7-47592-6	2024	https://www.morebooks.shop/shop-ui/shop/book-launch-offer/57f1ca15802bf35e5a5d331b8ce5e0640abe6d6b
23	Responsive Web Design with HTML5 and CSS3	Rupesh Kumar Tipu	Lambert Academic Publishing	978-620-7-47593-3	2024	https://www.morebooks.shop/shop-ui/shop/book-launch-offer/d6cd09e78d058054102823cdc5fc33ff170eef6e
24	Advanced Android Patterns: Optimizing Apps for Performance	Rupesh Kumar Tipu	Lambert Academic Publishing	978-620-7-47594-0	2024	https://www.morebooks.shop/shop-ui/shop/book-launch-offer/9a8ae27b0b57f47f81f16a6de2376297aaf57863

25	The Essence of C++: A Deep Dive into Object-Oriented Programming	Rupesh Kumar Tipu	Lambert Academic Publishing	978-620-7-47595-7	2024	https://www.morebooks.shop/shop-ui/shop/book-launch-offer/f475bf4b3c362444863f12227dbda0547d98be7d
26	Large Language Models Unveiled: Development and Deployment Strategies	Rupesh Kumar Tipu	Lambert Academic Publishing	978-620-7-47597-1	2024	https://www.morebooks.shop/shop-ui/shop/book-launch-offer/d4ee643f87b1539c5a9ce7bcdfffbf13cb7f9260
27	Node.js In-Depth: Building Scalable Web Applications	Rupesh Kumar Tipu	Lambert Academic Publishing	978-620-7-47599-5	2024	https://www.morebooks.shop/shop-ui/shop/book-launch-offer/f8c8ea2eb0aa4c1f94115499725e96a0c5f147ec
28	React.js Essentials: A Modern Front-End Developer's Guide	Rupesh Kumar Tipu	Lambert Academic Publishing	978-620-7-47603-9	2024	https://www.morebooks.shop/shop-ui/shop/book-launch-offer/ec4977e203b58daea64820dd5670f89a1ae0d193
29	Full-Stack JavaScript Development: Mastering Node.js and React.js	Rupesh Kumar Tipu	Lambert Academic Publishing	978-620-7-47607-7	2024	https://www.morebooks.shop/shop-ui/shop/book-launch-offer/ff00f83a088228a9d436be910c28aed4704ea475
30	Advanced Patterns in Node.js and React.js: Crafting Enterprise-Level Applications	Rupesh Kumar Tipu	Lambert Academic Publishing	978-620-7-47636-7	2024	https://www.morebooks.shop/shop-ui/shop/book-launch-offer/4b8818fa3a8b66a4975a3e1d7b6d307157bf84e4

Patent Publications

Sr. No.	Patent Title	Inventors	Country	Application Number	Publication Date	Type
1	SMARTPREDICT: CONCRETE STRENGTH ESTIMATION VIA MACHINE LEARNING	Rupesh Kumar Tipu	India	202411014830	08-03-2024	Published
2	MACHINE LEARNING-BASED GUI FOR ESTIMATING THE STRENGTH OF RECYCLED AGGREGATE CONCRETE	Rupesh Kumar Tipu	India	202411011153	23-02-2024	Published
3	INNOVATIVE GUI-BASED APPROACH FOR PREDICTING FLOW AND COMPRESSIVE STRENGTH IN HIGH-PERFORMANCE CONCRETE	Rupesh Kumar Tipu	India	202411007500	16-02-2024	Published
4	INTELLIGENT PREDICTIVE SYSTEM AND USER INTERFACE FOR HIGHPERFORMANC E CONCRETE COMPRESSIVE STRENGTH ASSESSMENT	Rupesh Kumar Tipu	India	202411007359	02-02-2024	Published
5	Machine Learning-Enhanced Graphical Interface for Optimized Concrete Mix Design	Rupesh Kumar Tipu	India	202411019684	16-03-2024	Published

DISSERTATIONS GUIDED**➤ M. Tech: 01**

Sr. no.	Name of student	Title of M. TECH. Dissertation	Passing Year
1	VIHAN NITIN SHAH	Development of Machine learning based Predictive model for the workability of concrete	2023
2	SAMRATH SHAH	Machine learning model development for composite column capacity prediction	2023

➤ B. Tech: 30+

MAJOR ATTENDED CONFERENCE/WORKSHOP/STTP/FDP IN INDIA

Sr. no.	Name of Conference/Workshop/STTP	Venue	Date and year
1	Bootcamp on Drone Technology, conducted by the Centre for Artificial Intelligence & Robotics, IIT Mandi, and was funded by the Ministry of Electronics and Information Technology (MeitY), Government of India, under the project entitled "Capacity Building for Human Resource Development in Unmanned Aircraft System (Drone and Related Technology)	IIT Mandi	25 to December 30, 2023
2	International conference on computer communication and informatics (ICCCI)	(Online) SHRI SHAKTHI INSTITUTE OF ENGINEERING AND TECHNOLOGY	29 to January 31, 2024
3	International conference on computer communication and informatics (ICCCI)	(Online) SHRI SHAKTHI INSTITUTE OF ENGINEERING AND TECHNOLOGY	29 to January 31, 2024
4	One-Week Online National Faculty Development Programme on "MOOCs and e-Content Development"	(Online) K. R. Mangalam University Gurugram	29th April to 5th May 2023.
5	Conference: "Advanced Engineering Optimization Through Intelligent Techniques" organized by SVNIT, Surat.	(Online) SVNIT Surat	January 28-30, 2022
6	Conference: "International Conference on Application of Intelligent Computing in Engineering and Science" organized by NIT, Raipur.	(Online) NIT Raipur	Feb. 12-13, 2022
7	Expert Lecture: "Cleaner Energy and Carbon-Capture, Utilization, Sequestration "and "Funding Opportunities for Researchers"" Organized by CHAURSAT	CHARUSAT University Anand	Oct. 11, 2022
8	STTP: "Future of Machine Learning & Deep Learning for HealthCare Analytics" GUJCOST Sponsored	CHARUSAT University Anand	October 17-21, 2022
9	Workshop: "Energy Asset Management in Rural and Urban Areas" by "Centre for Rural-Urban Dynamics" at IRMA	IRMA Anand	December 12, 2022

CERTIFICATION COURSE

Sr. no.	Name of the Course	Organizer	Status
1	IBM Data Science Professional Certificate	Coursera	Completed
2	Basic Certificate Course in Artificial Intelligence	Team FutureSkills PRIME AI C-DAC Pune	Completed