

Pratikkumar Parimal Shah
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Contact no. 9978918492
DoB: April 20, 1982



Associate Professor,
Dept. of Electronics and Communication Engineering
Indian institute of Information Technology Vadodara

Gender: Male | Category: General/ Unreserved | Nationality: Indian | Marital Status: Married

Education

Doctor of Philosophy (DAIICT, Gandhinagar 2005-2012 3.50/4.00)
Thesis: On Curve Reconstruction in Riemannian Manifolds: Ordering Motion Frames
Supervisor: Prof. Samaresh Chatterji

Master of Technology in ICT (DAIICT, Gandhinagar 2003-2005 3.38/4.00)
Thesis: Active Contours in Action
Supervisor: Prof. Asim Banerjee

Bachelor of Engineering in ECE (SVIT, Gujarat University, 1999-2003)
Consistently ranked amongst first six in University and received a Gold Medal from the Institute with an aggregate of 73% (First class with distinction)

Higher Secondary Certificate (Science Stream - GSEB - Lal Bahadur Shastri Vidhyalaya, Vadodara - 1999 - 76.77% - Distinction)

Secondary School Certificate (GSEB - Sardar Vinay Mandir, Vadodara, 1997 - 90.57%)

Academic Experience

July 2025 - Conti.
Associate Professor (Level-13 A2,
Department of Electronics and Communication Engineering
Indian Institute of Information Technology Vadodara

January 2016 - July 2025
Assistant Professor (Grade-I, Level-12, Cell-11)
Department of Computer Science and Engineering

Indian Institute of Information Technology Vadodara

July 2013 - January 2016

Assistant Professor (AGP 8000) with Indian Institute of Information Technology Vadodara

July 2011 - July 2013

Faculty member with the Department of Electronics and Communication, The LNMIIT, Jaipur

Research/ Consultancy/ Sponsored R&D

December 2025 - June 2027 (India Optel Limited, INR 64.14 Lakhs)

Design of Integrated Thermal Imaging Platform and Image Processing Algorithms

December 2025 - December 2027 (Urban Improvement Trust Bhilwara, INR 38.94 Lakhs)

Government School Digitization Project

September 2025 - Feb 2026 (Indian Knowledge System - INR 7.2 Lakhs)

1. Compilation and Validation of Predictions for Agriculture as Quoted in Compositions Preserved in the form of Bhadli Kavya: A Journey from Bengal, Bihar, Rajasthan to Gujarat
2. Development of a Course on “Harmonizing Traditions: Indian Classical Music and the Science of Sound” with focus on Creation of a Knowledge base of Bandishes Transcribed in Bhatkhande Notations

April 2025 - March 2028 (Sponsored R&D Higher Education Funding Agency - INR 50 Lakhs)

Development of Multisensor Data based Automated Crop Stress Management and Soil Map Monitoring System

July 2022 - March 2025 (Sponsored R&D ISRO - INR 11.49 Lakhs)

Development of Safe Ship Navigation Software for SAC, ISRO

October 2019 (Consultancy work with Tata Power - INR 3.16 Lakhs)

Conducted two five days training programs on Life Data Analytics in R (Failure Analysis for Predictive Maintenance) for Tata Power Engineers at Mumbai and Jamshedpur.

October 2020 - October 2021 (Joint research with Indian Meteorological Department)

Title : Data-Driven Model Free Approach to Weather Analysis

Developed nowcast and forecasting pipeline using Deep Convolutional Neural Networks for the state of Madhya Pradesh as a project coordinator along with Dr. Soma Sen Roy, Scientist-F, IMD

June 2025 - June 2007 (Senior Research Fellow - DAIICT - NSTL Vizag)

On a sponsored project on Implementing Estimation Filters for Passive Target Tracking

(Kalman, Extended Kalman and Particle Filters) for Naval Science and Technology Laboratory, Vizag, India with Prof. Vijay Kumar Chakka.

Certification Programs/ CEPs/ Workshops/ FDPs/ Sponsored Certification Programs

Coordinated Six Months AICTE QIP PG Certification Program on Artificial Intelligence sponsored by AICTE (INR 20 Lakhs, June - Dec 2024)
<https://sites.google.com/iiitvadodara.ac.in/qip-pg-cert-ai/home>

Designed, Developed and Conducted a self-financed CEP course on Music Mathematics and Machines (Summer of 2022, 2023, 2024 <https://sites.google.com/iiitvadodara.ac.in/mmm/home>)

NVIDIA University Ambassador (Gold Tier)

Conducted multiple NVIDIA Deep Learning workshops (more than 400 students trained in 2024 and more than 300 students trained in 2023)

Conducted multiple ATAL FDPs on Artificial Intelligence and Data Science sponsored by AICTE during 2019-2023 (four on AI and one on DS <https://atal-ai.iiitvadodara.ac.in/home> , <https://atal-da.iiitvadodara.ac.in/home>)

Conducted a One Day Workshop on Ethics and Integrity (NEP - October 2021)
(<https://sites.google.com/iiitvadodara.ac.in/ethicsintegrity/home>)

March 2016 - Organized IEEE CIS - Winter School on Emerging Research Trends in Computational Intelligence – Theory and Applications

Publications

Geometry Processing and Computer Vision

Prashant Domadiya and Pratik Shah. 2024. Real-Time Enveloped Mesh Editing Using Vector Graph Representation. In SIGGRAPH Asia 2024 Technical Communications (SA '24). Association for Computing Machinery, New York, NY, USA, Article 33, 1–4.
<https://doi.org/10.1145/3681758.3698001>

Prashant M Domadiya, Pratik Shah, and Suman Mitra. 2019. Guided Deformation Transfer. In Proceedings of the 16th ACM SIGGRAPH European Conference on Visual Media Production (CVMP '19). Association for Computing Machinery, New York, NY, USA, Article 7, 1–10.
<https://doi.org/10.1145/3359998.3369408>

P. Domadiya, P. Shah and S. K. Mitra, "Vector Graph Representation for Deformation Transfer Using Poisson Interpolation," *2018 IEEE Winter Conference on Applications of Computer Vision (WACV)*, Lake Tahoe, NV, USA, 2018, pp. 876-884, doi: 10.1109/WACV.2018.00101.

Shah, P., Chatterji, S. On the Curve Reconstruction in Riemannian Manifolds. *J Math Imaging Vis* 45, 55–68 (2013). <https://doi.org/10.1007/s10851-012-0344-0>

AR/ VR

Pranay Solanki, Anuraag Patil, Pratik Shah, Pramit Mazumdar, Comparative Evaluation of Immersive Virtual Reality and Document-Based Training for Industrial Gas Leak Response, 10th International Conference on Intelligent Computing and Virtual & Augmented Reality Simulations (ICVARS) 2026.

Harsha Agrawal, Patchigolla Chinmayee, Samadhan Erande, Pratik Shah, Pramit Mazumdar, Virtual Reality Based Earthquake Training with Blockchain Certification, 10th International Conference on Intelligent Computing and Virtual & Augmented Reality Simulations (ICVARS) 2026.

Sonawane, P., Haldar, S., Bharti, S., Mazumdar, P., Shah, P. (2026). Explosive Neutralization Training in Virtual Reality. In: Nakamatsu, K., Kountcheva, R., Patnaik, S. (eds) *Virtual Reality and Visualization Based on AI Technologies. AIVR 2025. Smart Innovation, Systems and Technologies*, vol 463. Springer, Cham. https://doi.org/10.1007/978-3-032-10951-4_9

Mehta, M., Dhoni, S., Raj, D., Mazumdar, P., Shah, P. (2026). Impact of Preconditioning and Cognitive Overload on Recall Tasks in Virtual Environments. In: Nakamatsu, K., Kountcheva, R., Patnaik, S. (eds) *Virtual Reality and Visualization Based on AI Technologies. AIVR 2025. Smart Innovation, Systems and Technologies*, vol 463. Springer, Cham. https://doi.org/10.1007/978-3-032-10951-4_14

Vaibhav Kumar Jonwal, Pratik Shah, Pramit Mazumdar, “Immersive Metaverse Piano Tutorial: Comparative Analysis of VR Interaction Methods”, 9th IEEE International Conference on Intelligent Computing and Virtual & Augmented Reality Simulations (ICVARS) 2025, Birmingham, UK

Amon Sharma, Rudra Patel, Soham Sawant, Pratik Shah, Pramit Mazumdar. “Mixed Reality LEGO vs. Physical LEGO: Cognitive, Emotional, and Motor Advantages”, 9th ICVARS 2025, Birmingham, UK

Cybersecurity

Arpit Jain, Saransh Naik, Shailendra Mandal, Gaurav Pareek and Pratik Shah, “User-Driven Query Sanitization for Interactive Chatbots using Fine-Tuned Sequence-to-Sequence Models,” 6th International Conference on Emerging Trends and Technologies on Intelligent Systems

(ETTIS 2026), C-DAC Noida, India, 1–3 July 2026. (Conference Proceedings indexed in Lecture Notes Networks and Systems, Accepted for Publication)

Megh Bhatt, Pratik Shah and Gaurav Pareek, “A Novel Awareness-Based Chatbot Framework for Preventing Accidental Data Leakage”, 16th International IEEE Conference on Computing Communication and Networking Technologies (ICCCNT-2025). IIT Indore, India

Machine Learning/ Deep Learning (Image/ Video/ NLP)

Bhatter, Govind & Shukla, Animesh & Popatiya, Pratham & Shah, Pratik & Patel, Jignesh. (2026). Enhanced Drug Toxicity Prediction via Reverse Transfer Learning and Graph-Based Visual Verification, Proceedings of the International Conference on Recent Advances in Intelligent and Sustainable Technologies (RAIST 2026) 10.2991/978-94-6239-707-1_29.

Vaghasiya, V., Shimpi, D., Shah, P., Bhatt, J., ”Text Classification using LLM and Group Relative Policy Optimization (GRPO)” 11th International Conference on Pattern Recognition and Machine Intelligence (PReMI 2025) [Accepted]

Shivam Solanki, Manthan Hirani, Venkata Phanikrishan, Pratik Shah, "Dynamic Risk Stratification in ICU Sepsis: A Deep Reinforcement Learning Approach Using Synthetic Data", IEEE International Conference on Recent Advances in Computing and Systems (ReACS '25)

Airani, P.; Pipada, N. and Shah, P. (2025). Classification of Complaints Text Data by Ensembling Large Language Models. In *the 17th International Conference on Agents and Artificial Intelligence - ICAART 2025*

Sharma, D. K.; Singh, U.; Nalawade, S. and Shah, P. (2025). Comparative Analysis of Simulated Annealing and Particle Swarm Optimization for Multi-Robot Task Allocation in ROS. In *the 17th International Conference on Agents and Artificial Intelligence - ICAART 2025*

Sharma P., Patel A., Shah P. and Senroy S. (2023). Data-Driven Weather Forecast Using Deep Convolution Neural Network. In *Proceedings of the 15th International Conference on Agents and Artificial Intelligence - Volume 3: ICAART*, ISBN 978-989-758-623-1, pages 853-860. DOI: 10.5220/0011785200003393

Pathak J. and Shah P. (2021). Markov Logic Network for Metaphor Set Expansion. In *Proceedings of the 13th International Conference on Agents and Artificial Intelligence - Volume 2: ICAART*, ISBN 978-989-758-484-8, pages 621-628. DOI: 10.5220/0010205606210628

Akansha Tyagi, Ashish Patel, and Pratik Shah. 2019. Text Like Classification of Skeletal Sequences for Human Action Recognition. In Pattern Recognition: 5th Asian Conference, ACPR

2019, Auckland, New Zealand, November 26–29, 2019, Revised Selected Papers, Part II. Springer-Verlag, Berlin, Heidelberg, 335–350. https://doi.org/10.1007/978-3-030-41299-9_26

D. Shah, P. Shah and A. Banerjee, "Similarity based regularization for online matrix-factorization problem: An application to course recommender systems," *TENCON 2017 - 2017 IEEE Region 10 Conference*, Penang, Malaysia, 2017, pp. 1874-1879, doi: 10.1109/TENCON.2017.8228164.

F. Shah, P. Shah and R. Dubey, "Specularity removal for robust road detection," *2016 IEEE Region 10 Conference (TENCON)*, Singapore, 2016, pp. 1853-1858, doi: 10.1109/TENCON.2016.7848342.

L. Ramesh and P. Shah, "R-SpaRCS: An algorithm for foreground-background separation of compressively-sensed surveillance videos," *2015 12th IEEE International Conference on Advanced Video and Signal Based Surveillance (AVSS)*, Karlsruhe, Germany, 2015, pp. 1-6, doi: 10.1109/AVSS.2015.7301773.

Domadiya, P., Shah, P., Mitra, S.K. (2015). Fast and Accurate Foreground Background Separation for Video Surveillance. In: Kryszkiewicz, M., Bandyopadhyay, S., Rybinski, H., Pal, S. (eds) Pattern Recognition and Machine Intelligence. PReMI 2015. Lecture Notes in Computer Science, vol 9124. Springer, Cham. https://doi.org/10.1007/978-3-319-19941-2_10

S. Parekh and P. Shah, "Nyquist filter design using POCS methods: Including constraints in design," *2014 IEEE International Symposium on Signal Processing and Information Technology (ISSPIT)*, Noida, India, 2014, pp. 000370-000375, doi: 10.1109/ISSPIT.2014.7300617.

Cognitive Engineering

Bhavsar, P., Shah, P., Sinha, S. *et al.* Musical Neurofeedback Advancements, Feedback Modalities, and Applications: A Systematic Review. *Appl Psychophysiol Biofeedback* 49, 347–363 (2024). <https://doi.org/10.1007/s10484-024-09647-0>

Doctoral Thesis Guided

Sr No	Student Name	Thesis Title	University/ Institute	Degree Awarded in	Role	Supervisor
1	Prashant Domadia	On Vector Graph Representation for 3D Meshes and Algorithms for Mesh Deformation, Enveloping, Interpolation and Morphing	DAIICT	2021	Co-supervisor*	Prof. Suman Mitra
*Initially since the institute did not have a PhD program, the mentor institute DAIICT permitted the IIITV faculty members to take PhD/ MTech students from DAIICT.						

M.Tech. Thesis Guided

Sr No	Name of Student	Thesis Title	University/ Institute	Degree Awarded/ Thesis Submission Date	Role (Main Supervisor/ Co-Supervisor)
1	Dhruv Gupta	Study of Fuzzy Clustering Algorithms and Enhanced Fuzzy Reasoning - Application to Texture Based Image Segmentation	DAIICT	March 13, 2015	Co-supervisor
2	Lekshmi Ramesh	Low rank and sparse decomposition of compressively sensed matrices: Application to surveillance video processing	DAIICT	June 22, 2015	Main Supervisor
3	Falak Shah	Road Detection for Intelligent Transport Systems	DAIICT	June 16, 2015	Main Supervisor
4	Dhruv Shah	Course Recommender System	DAIICT	June 20, 2015	Co-supervisor
5	Akansha Tyagi	Human Activity Recognition for Text Like Motion Retrieval	IIIT Vadodara	June, 2019	Main Supervisor

6	Hemant Agarwal	On Reinforcement Learning Framework for the Recommender Systems	IIIT Vadodara	June, 2019	Main Supervisor
7	Dharamveer Singh Mourya	Multi elevator control using reinforcement learning	IIIT Vadodara	July 2019	Main Supervisor
8	Soumya Bhardwaj	Ridesharing with Deep Q-Network	IIIT Vadodara	July 2020	Main Supervisor
9	Jaya Pathak	Markov Logic Network for Metaphor Set Expansion	IIIT Vadodara	July 2020	Main Supervisor
10	Gaurav Sharma	Security Enhancement In IRS Assisted Wireless Communication	IIIT Vadodara	July 2021	Co-supervisor
11	Priya Sharma	Data-Drive Weather Forecast	IIIT Vadodara	July 2021	Main Supervisor
12	Prashant Dhameja	Signal Reconstruction from Energy Measurements in Subspaces	IIIT Vadodara	July 2022	Main Supervisor
13	Rathod Dharmraj Manojbhai	A Framework for Enabling Intent Aware Service Delivery	IIIT Vadodara	July 2022	Co-supervisor
14	Kamal Karre	Enhancing Student Counseling Using Web Development	IIIT Vadodara	July 2023	Main Supervisor
15	PRUTHWEESH A S A	Multiclass Classification of Complaints Data and Confidence Score Attestation	IIIT Vadodara	July 2024	Main Supervisor
16	Vikas Vaghasiya	Hierarchical Hyperbolic Representation Learning for Face Spoof Detection and Category Discovery	IIIT Vadodara	May 2026	Main Supervisor

Selected B.Tech. Projects

Sr No	Title of the Project	Name of Student(s)	Name of Supervisor(s)	University/ Institute	Year
1	Target Localization in Wireless	Gaurav	Pratik	IIIT Vadodara (on	2016-17

	Setup	Yadav	Shah	campus)	
2	Sparse Matrix Storage	Saurabh Jain (201451069)	Pratik Shah	IIIT Vadodara (on campus)	2017-18
3	Face Recognition	Vikas Plakurthi (201451021)	Pratik Shah	IIIT Vadodara (on campus)	2017-18
4	Efficient Face Detection and Recognition using OpenIMAJ	Mayank Maurya (201452006)	Pratik Shah	IIIT Vadodara (on campus)	2017-18
5	Some Studies on Motion Retrieval	Raju Kaushik (201452057)	Pratik Shah	IIIT Vadodara (on campus)	2017-18
6	Counting People in Streaming Video	Pooja Gurjar (201652016)	Pratik Shah	IIIT Vadodara (on campus)	2019-20
7	Time Series Analysis for pricing of Agricultural Commodities	Prerna Singh	Pratik Shah, D K Parmar	College of agricultural information technology, Anand Agricultural University, Gujarat (on campus)	2019-20
8	Solving Lights Out using Quantum Search Algorithms	Vijay Karanjkar	Pratik Shah	IIIT Vadodara (on campus)	2023-24
9	Sketch Colorization: From Generative Adversarial Networks to Diffusion Models and 2D Gaussian Splatting	Patel Chaitanya	Pratik Shah	IIIT Vadodara (on campus)	2025-26
10	Implementation and Evaluation of Non-Uniformity Correction Algorithms for Infrared Imaging	Kunj Thakkar	Pratik Shah	IIIT Vadodara (on campus)	2025-26
11	Multi-Temporal Farm Delineation using Delineate Anything : A Comparative Study in Virod, Vadodara	Vaibhav Kumar Jonwal	Pratik Shah	IIIT Vadodara (on campus)	2025-26
12	Transcription, Verification, and Baseline Classification of Indian Bandishes using **kern Notation	Varad Vyavhare	Pratik Shah	IIIT Vadodara (on campus)	2025-26

Institute Administrative/ Support Work

Present:

Associate Dean Academics, Member of Building and Works Committee, Member of Project Monitoring Committee, Member of Campus Development and Construction Coordination committee, PIC Convocation, Nodal Officer NEP, PIC Curriculum, Member of Space and Planning Committee, Member of Senate

Past:

Chairman DAC, Member of BoG, Member of Senate, PIC ICT, PIC Academics, Chairman Admission Committee UG/ PG

Laboratories Established

January 2020 - Present: Project Coordinator of GUJCOST Sponsored Supercomputing Facility at IIIT Vadodara (<https://sites.google.com/iiitvadodara.ac.in/hpc/paramshavak>)

2014-15 - Established four Computer Laboratories as PIC ICT (200+ computers for supporting courses as per curriculum, Open Source tools and Linux OS, laid foundation for the culture of open source development)

2014-15 - Setting up of Electronics Laboratory (CROs, Function Generators, NI Virtual Bench which can cater to 80 students) supporting the experiments as per the courses in UG Curriculum

Courses Taught

Core Courses:

Artificial Intelligence, Information Retrieval, Natural Language Processing
Discrete Mathematics, Probability and Statistics, Essential Mathematics, Linear Algebra, Signals and Systems, Digital Signal Processing, Principles of Communication

Elective Courses:

Quantum Machine Learning
Topological Data Analysis, Curves and Surfaces for Computer Graphics, Computer Graphics and Multimedia
Introduction to Metaverse, Introduction to Robotics

Information Theory Inference and Learning
Signals and Systems, Digital Signal Processing, Principles of Communication
Optimization Methods, Category Theory

Membership of Professional Bodies

Senior Member IEEE - 93217759
Chair Computational Intelligence Society, IEEE, Gujarat Section
Member of INSTICC - 21365

Some Recent Invited/ Expert Talks

Agriculture Information System, Karyashala on AI/ML-Enabled Remote Sensing and Drone Technologies for Climate Resilience, GTU, 2 February 2026

Digital Twins - Agriculture 4.0, AISSET, IIIT Surat, 20 November 2025

An invited TechConnect – TechTalk for employees of STMicroelectronics INDIA on *Harmonizing Traditions Indian Classical Music and the Science of Sound* on 27th June, 2024

An invited talk on *Magic Number 7 plus or minus 2 in Decision Making* for Karyashala Workshop on Data Analytics for Cognitive Engineering, on 15th March, 2023 at VNIT Napur.

An expert talk on *Universal Approximators in Tensorflow/ Keras*, at GUJCOST Sponsored 5-Day STTP on "AI and ML Applications in Data Science" and organised by Department of Computer Science, IICT, Indus University in February 2021

An expert talk on *PageRank in Natural Language Processing*, at FDP organized by PDEU, Gandhinagar during September 2020

References

Prof. Raghubir Sharan
Email: sharan@iitgn.ac.in
Contact no: 7600635064

Prof. Dharmendra Singh

Email: dharmfec@iiitvadodara.ac.in

Contact no: 9897060088

Prof. Sarat Kumar Patra

Email: director@nita.ac.in ; skpatra@iiitvadodara.ac.in; skpatra@nitrrkl.ac.in

Contact no: 9437221578