

# PRASHANT KUMAR NAG

## Curriculum Vitæ

I am an early-career researcher specializing in artificial intelligence, deep learning, and affective computing, with a focus on emotion detection, cognitive appraisal, and explainable AI. My work explores how AI models interpret human emotions in text and how transparent analytical methods can improve understanding, reliability, and human-centered applications. I am committed to developing rigorous, reproducible, and interpretable AI techniques while contributing to research, teaching, and collaborative academic growth.



## RESEARCH INTERESTS

Core

- **Affective Computing**

Computational emotion modeling, appraisal-based emotion reasoning, and human-AI affective interaction

Core

- **Text-based Emotion Recognition**

Sentence-, span-, and context-level models for emotion and emotion-cause detection

Methods

- **Explainable AI for NLP**

Attention-based interpretability, attribution methods, and rule-based cognitive explanations



## EDUCATION

Jul. 2019

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Thesis Submitted:  
06/11/2025

- **Doctor of Philosophy (Ph.D.) in Computer Applications**

Maulana Azad National Institute of Technology, Bhopal



M.P. India

**Thesis:** *Design of Efficient Artificial Intelligent Deep Learning Models for Human Emotion Detection*

**Specialization:** Artificial Intelligence, Deep Learning, Natural Language Processing and Affective Computing

**Supervisor:** Dr. Amit Bhagat

**Co-supervisor:** Dr. R. Vishnu Priya

Jul. 2012

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Jun. 2015

- **Master of Computer Applications (MCA)**

National Institute of Technology, Tiruchirappalli



T. N. India

**Thesis:** *Automated Attendance using QR Code in Classrooms*

Jul. 2008

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Jun. 2011

- **Bachelor of Computer Applications (BCA)**

Devi Ahilya Vishwavidyalaya, Indore



M.P. India



## TEACHING EXPERIENCE

Aug. 2016

|  
Apr. 2019

- **Honorary Faculty, Department of Computer Science**

Institute for Excellence in Higher Education (IEHE), Bhopal



M.P. India

*Undergraduate Computer Science teaching; regular evaluation and practical supervision under the Honorary Faculty role.*

**Courses taught:** Introduction to Programming, Linux Programming, Computer Networks



## CONTACT INFO

● Ph.D.— Thesis Submitted

● Maulana Azad National Institute of Technology, Bhopal

● Bhopal, Madhya Pradesh, India

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● EhalZtAAAAAJ&hl

● HPE-9262-2023

● ResearchInfuser



## TECHNICAL SKILLS

Advanced: R (Quarto, Rmarkdown, etc.), Zotero, Python, WSL2/ Linux Workflow, DVC, Markdown, MS Office and Git

Intermediate: Inkscape, Gimp, LibreOffice, PBS and bash/shell

Basic: C/C++ and JavaScript



## LANGUAGES

English: Professional Working Proficiency

Hindi: Native

Apr. 2016

- **Computer Faculty (Computer Applications)**

Unique Girls College Parasia, Chhindwara

 M.P. India

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Jun. 2016

*Undergraduate teaching in Computer Applications; supervision of practical sessions and student evaluation.*

**Courses taught:** Introduction to Programming, Computer Fundamentals, Internet and Web Design

Nov. 2015

- **Assistant Professor (Computer Science)**

Sony College of Management and Technology, Chhindwara

 M.P. India

|  
Apr. 2016

*Undergraduate and postgraduate teaching in Computer Science; assessment and examination duties.*

**Courses taught:** Introduction to Programming, Data Structures, Linux Programming

## PUBLICATIONS

- **Publication Summary**

9 as first/corresponding or co-first authors, 1 as co-author

## JOURNAL ARTICLES

Apr. 2025

- **Expanding AI's Role in Healthcare Applications: A Systematic Review of Emotional and Cognitive Analysis Techniques**

Prashant Kumar Nag, Amit Bhagat, R. Vishnu Priya

*IEEE Access*

SCIE · Q1 · IF 3.6 (JCR 2023)

 Read

Nov. 2024

- **Yolov5-Based Attention Mechanism for Gesture Recognition in Complex Environment**

Deepak Kumar Khare, Amit Bhagat, R. Vishnu Priya, Prashant Kumar Nag, Sunil Malviya

*International Journal of Advanced Computer Science & Applications*

Scopus · Q3 · IF 0.9 (2024)

 Read

Sep. 2023

- **Text-Based Emotion Recognition Using Contextual Phrase Embedding Model**

Vishnu Priya R., Prashant Kumar Nag

*Multimedia Tools and Applications*

SCIE · Q2 · IF 3.0 (JCR 2023)

 Read

## CONFERENCE PAPERS

In Press

- **Leveraging Text Data in Healthcare: A Systematic Review of AI-Driven Emotional Analysis and Patient-Centric Innovations**

Prashant Kumar Nag, Amit Bhagat, R. Vishnu Priya, Sunil Malviya, Sanjay Mishra

*International Conference on Healthcare Innovation and Smart Systems (ICHISS 2024) (Conference Presentation)*

*IEEE Xplore*

 Read

Dec. 2023

- **Emotional Intelligence Through Artificial Intelligence: NLP and Deep Learning in the Analysis of Healthcare Texts**

Prashant Kumar Nag, Amit Bhagat, R. Vishnu Priya, Deepak Kumar Khare

*2023 International Conference on Artificial Intelligence for Innovations in Healthcare Industries (ICAIIHI) (Conference Presentation)*

Jun. 2021

- **Contextual BI-Directional Attention Flow With Embeddings From Language Models: A Generative Approach to Emotion Detection**  
Prashant Kumar Nag, Vishnu Priya R  
AIR '21: Proceedings of the 2021 5<sup>th</sup> International Conference on Advances in Robotics (Conference Presentation)

Association for Computing Machinery

 Read

Jul. 2024

## PREPRINTS

- **Advancing Patient Care through Text Data: A Systematic Review of AI, Emotional Analysis, and Patient-Centric Applications in Healthcare**

TechRxiv

 Read

Mar. 2024

- **Emotional Intelligence Through Artificial Intelligence : NLP and Deep Learning in the Analysis of Healthcare Texts**

arXiv

 Read

Dec. 2024

- **A Systematic Review of AI, Emotional Analysis, and Patient-Centric Applications in Healthcare**

TechRxiv

 Read

## OTHER PUBLICATIONS

Mar. 2018

- **Impact of Digitization on Indian Economy**

IEHE Bhopal

Prashant Kumar Nag  
2<sup>nd</sup> National Conference on "Digital Economy: Impact and Challenges"  
(Conference Presentation)

## AWARDS & ACHIEVEMENTS

Jun. 2020

- **National Fellowship for Scheduled Caste Students (2020-21)**  
National Testing Agency (NTA) 

National Fellowship

Awarded by the Ministry of Social Justice and Empowerment, Government of India.

Jun. 2019

- **Entrance Examination for Full-Time Ph.D. (with Institute TA)**  
Maulana Azad National Institute of Technology (MANIT), Bhopal, India 

Entrance / Competitive Examination

Qualified the MANIT Ph.D. Entrance Test (2019) and was selected for the Full-Time Ph.D. programme with Institute Teaching Assistantship (TA).

- **National Eligibility Test for Assistant Professor**

Eligibility Examination (UGC-NET)

National Testing Agency (NTA) / University Grants Commission (UGC)

- Jun. 2020 (53.33%): Qualified for Assistant Professor
- Dec. 2019 (46.67%): Qualified for Assistant Professor
- Jun. 2019 (50.00%): Qualified for Assistant Professor
- Dec. 2015 (53.71%): Qualified for Assistant Professor

- **MCA Entrance Examinations**

Entrance / Competitive Examinations

- Cleared National Level MCA Entrance Exams
- IIT JAM (2011): Qualified (SC Category)
  - JNU MCA Entrance Exam (2011): Qualified (SC Category)
  - MCA Entrance Test (BIT) (2011): AIR 17
  - KIITEE Entrance Exam (2011): Rank 15 (SC Category)
  - NIMCET (2011, 2012): Qualified

## EXPERT LECTURES DELIVERED

- Oct. 2023 ● **Question Bank Development Workshop**  
Department of Physics & Electronics, IEHE  Bhopal, M.P.  
Topic: *Workshop on Question Bank Development and Outcome-Based Assessment Design*
- Feb. 2022 ● **National Workshop on Scilab**  
Institute for Excellence in Higher Education (IEHE)  Bhopal, M.P.  
Topic: *Computation Through Scilab & Solving differential Equations*
- Nov. 2019 ● **AICTE Training and Learning (ATAL) Academy FDP**  
Department of Mathematics, Bioinformatics and Computer Applications  Bhopal, M.P.  
Topic: *Introduction to Virtual Reality: Concepts, Applications, and Future Trends*
- Sep. 2019 ● **AICTE Training and Learning (ATAL) Academy FDP**  
Department of Mathematics, Bioinformatics and Computer Applications  Bhopal, M.P.  
Topic: *Fundamentals of Naive Bayes Classification and Its Applications in Machine Learning*
- Aug. 2018 ● **Certificate Course in Cryptography (CCC)**  
Institute for Excellence in Higher Education (IEHE)  Bhopal, M.P.  
Topic: *Foundation Course on Cryptography: Principles, Algorithms, and Applications*
- Feb. 2018 ● **Basic Computer Training**  
RCVP Noronha Academy  Bhopal, M.P.  
Topic: *Cloud Computing for Educators: Practical Use of Google Drive, Skype, and Cloud-Based Collaboration Tools*
- Jan. 2018 ● **NPTEL Awareness Workshop and Online Learning**  
NPTEL Local Chapter & ICT Cell, IEHE  Bhopal, M.P.  
Topic: *Hands-On Workshop on Configuring and Using Moodle for Online Teaching and Assessment*

## WORKSHOPS & SEMINARS

- Sep. 2025 ● **IEEE Authorship and Open Access Symposium**  
IEEE  Online  
*International Symposium*
- Jul. 2022 ● **Workshop on Artificial Intelligence and High-Performance Computing**  
NIT Mizoram & IIT Kharagpur  Online  
*National Workshop*
- Mar. 2020 ● **Six-Day Student Excellence and Learning Program (NPIU-SELP)**  
TEQIP-III at MANIT  Bhopal, M.P.  
*National Workshop*
- Dec. 2019 ● **AICTE Training and Learning (ATAL) Academy Five-Day Workshop**  
Department of Electronics and Communication Engineering, MANIT  Online  
*National Workshop*
- Jan. 2018 ● **NPTEL Awareness Workshop and Online Learning**  
NPTEL Local Chapter & ICT Cell, IEHE  Bhopal, M.P.  
*National Workshop*

Feb. 2017

- **National Seminar on Emerging Trends in CS and IT (ETCSIT)**  
Department of Computer Science, IEHE

 Bhopal, M.P.

*National Seminar*

Nov. 2019

## PROFESSIONAL DEVELOPMENT

- **AICTE Training And Learning (ATAL) Academy FDP on "Augmented Reality (AR)/Virtual Reality (VR)"**  
Department of Mathematics, Bioinformatics and Computer Applications, MANIT

 Bhopal M.P.

*National FDP*

Sep. 2019

- **AICTE Training And Learning (ATAL) Academy FDP on "Internet of Things (IoT)"**

Department of Mathematics, Bioinformatics and Computer Applications, MANIT

 Bhopal M.P.

*National FDP*

May. 2019

- **Faculty Induction Programme (FIP) under TLC Project**

National Institute of Technical Teachers' Training and Research, Bhopal

 Bhopal M.P.

*National FDP*

Sep. 2016

- **Faculty Development Programme on Innovative Teaching Methodologies in the Present Context**

Department of Computer Science, IEHE, Bhopal

 Bhopal M.P.

*National FDP*

## SERVICE & LEADERSHIP

### REVIEWING & EDITORIAL WORK

2025

- **Students' Conference on Electrical, Electronics and Computer Sciences (SCEECS2025)**  
MANIT Student Branch

*Meta Reviewer*

2024

- **1<sup>st</sup> International Conference on Artificial Intelligence for Innovations in Healthcare Industries (ICAIHI)**  
ICHISS2024 Technical Program Committee

*Reviewer*

2024

- **4<sup>th</sup> IEEE International Conference on Signal Processing, Informatics, Communication and Energy Systems (IEEE SPICES 2024)**  
IIIT Kottayam

*Reviewer*

2024

- **7<sup>th</sup> International Conference Recent Trends in Image Processing & Pattern Recognition (RTIP2R 2024)**  
IIIT Bhopal

*Reviewer*

2024

- **Students' Conference on Electrical, Electronics and Computer Sciences (SCEECS2024)**  
MANIT Student Branch

*Meta Reviewer*

### ACADEMIC ICT CONTRIBUTIONS

2018

- **TechFest Promotional Teaser (IEHE)**  
ICT Cell, IEHE

 Bhopal, MP

*Created the first-ever promotional video for the departmental TechFest.*

*Developer*

2017

- **Moodle-Based Online Assignment Submission System**  
ICT Cell, IEHE

 Bhopal, MP

*Implemented digital submission and trained faculty.*

*Coordinator*

| 2019

2017  
|  
2019

### ● **Google Sites for student tasks**

ICT Cell, IEHE

📍 Bhopal, MP

*Designed and deployed structured Google Sites workflows to eliminate paper-based submissions.*

*Coordinator*

2017  
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2019

### ● **TechFest (Computer Forum) – Event Coordination**

Department of Computer Science, IEHE

📍 Bhopal, MP

*Assisted in planning, sessions, publicity.*

*Coordinator*

2024

### ● **OPEN SOURCE PROJECTS**

#### ● **MANIT Thesis Quarto Extension (manit-thesis)**

Developer & Maintainer

GitHub

*Quarto extension that applies MANIT-approved thesis formatting through a reusable template for fully reproducible dissertation authoring.*

2024

#### ● **MANIT Presentation Template (manit-presentation)**

Developer

GitHub

*Quarto presentation theme (reveal.js/beamer) aligned with MANIT branding, designed for research talks, conference presentations, and academic seminars with automated slide structuring, code highlighting, and reusable layouts.*

2024

#### ● **MANIT Pre-Thesis Template (manit-pre-thesis)**

Developer

GitHub

*Quarto document template for MANIT PhD Pre-Thesis / Synopsis reports with standardized academic sections and automated formatting.*

### ● **REFERENCES**

#### ● **Dr. Amit Bhagat**

Associate Professor, Department of Mathematics, Bioinformatics and Computer Applications  
Maulana Azad National Institute of Technology, Bhopal

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#### ● **Dr. R. Vishnu Priya**

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National Institute of Technology, Tiruchirappalli

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