

## Dr. Nagaratna B. Chittaragi

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### Education

	Degree	Year	Institute	Specialization
1	Ph.D.	2020	National Institute of Technology Karnataka, Surathkal	Computer Science and Engineering
2	M.Tech.	2010	Siddaganga Institute of Technology, Tumkur	Computer Science and Engineering
3	BE	2005	SBMSIT, Bangalore	Information Science and Engineering

### Professional Experience

	Date (from-to)	Designation	Organization
1	27-09-2024-Till Date	Associate Professor	Siddaganga Institute of Technology, Tumkur
2	01-01-2011 - 26-09-2024	Assistant Professor	Siddaganga Institute of Technology, Tumkur
3	16-07-2005 -31-12-2010	Lecturer	Siddaganga Institute of Technology, Tumkur

### Positions held

- *SITAA Sub-committee member*

### Affiliations of Professional organizations

- Life Time Membership in Artificial Intelligence and Machine Learning Association

### Awards and Honors

- AWS Certified Cloud Practitioner AWS Academy
- Best Paper Award, " Automatic text-independent Kannada dialect identification system" International Conference on Information Systems Design and Intelligent Applications, Mauritius
- Best Paper Award, " Extractive Document Summarization Using a Supervised Learning Approach" International Conference on Distributed Computing, VLSI, Electrical Circuits and Robotics (DISCOVER), Mangalore.

## Courses Taught

### Undergraduate Courses

- File Structures (Theory and Lab)
- File Structures and Storage Management (Theory and Lab)
- Data Structures (Theory and Lab)
- Distributed Operating System
- Analysis and Design of Algorithms (Theory and Lab)
- Principles of User Interface Design
- Problem Solving using Computers (Theory and Lab)
- Software Testing (Theory and Lab)
- Cloud Computing
- Computer Organization
- Storage Area Networks
- System Programming Lab
- System Software
- Machine Learning
- Artificial Intelligence and Machine Learning (Theory and Lab)
- Software Engineering and Testing (Theory and Lab)
- Object Oriented Modeling and Design
- Python for Data Science
- Design and Analysis of Algorithms (Theory and Lab)

### Postgraduate Courses

- Advanced Cryptography (Theory, M. Tech)

## Research Guidance

Sl. no	Name of the Scholar	Title	Year of completion

## Research Areas

- Machine Learning and Artificial Intelligence, Speech, Image, Audio, and Video Processing (Multi-media Information Processing)
- Natural Language Processing, Internet of Things (IoT)

#### Sponsored Projects

#### Publications

##### Journals

1. Nagaratna B. Chittaragi, Ambareesh Prakash, and Shashidhar G. Koolagudi (2018) “Dialect Identification Using Spectral and Prosodic Features on Single and Ensemble Classifiers”, *Arabian Journal for Science and Engineering*, 43(8): 4289-4302. (SCI Indexed)
2. Nagaratna B. Chittaragi and Shashidhar G. Koolagudi, “Automatic dialect identification system for Kannada language using single and ensemble SVM algorithms”. *Language Resources & Evaluation* 54, 553–585 (2020) (SCI Indexed)
3. Nagaratna B. Chittaragi and Shashidhar G. Koolagudi, “Acoustic-phonetic feature-based Kannada dialect identification from vowel sounds”. *International Journal of Speech Technology* 22, 1099–1113 (2019) (Scopus Indexed)
4. Nagaratna B. Chittaragi and Shashidhar G. Koolagudi, “Dialect Identification using Chroma-Spectral Shape Features with Ensemble Technique”. *Computer Speech and Language Journal*, Volume 70, 2021, 101230, <https://doi.org/10.1016/j.csl.2021.101230>. (SCI Indexed)
5. Kushan Shekhar, Nagaratna B. Chittaragi and Shashidhar G. Koolagudi, “Automatic Diagnosis of COVID-19 Related Respiratory Diseases from Speech”, *Journal of Multimedia Tools and Applications*, 82, 36599–36614 (2023). <https://doi.org/10.1007/s11042-023-14923-y> (SCI Indexed)
6. Joan L. Imbwaga, **Nagaratna B. Chittaragi** and Shashidhar G. Koolagudi, “Automatic Hate Speech Detection in Audio using Machine Learning Algorithms”, *International Journal of Speech Technology*. *International Journal of Speech Technology* 27, no. 2 (2024): 447-469. (Scopus Indexed)
7. Banerjee, D., Chittaragi, N.B. & Koolagudi, S.G. Video forgery localization using inter-frame denoising and intra-frame segmentation. *Multimedia Tools Appl* (2025). <https://doi.org/10.1007/s11042-025-20715-3>. (SCI Indexed)
8. Joan L. Imbwaga, Nagaratna B. Chittaragi and Shashidhar G. Koolagudi, “Explainable Hate Speech Detection using LIME”, *International Journal of Speech Technology*. (2024) (Scopus Indexed) <https://doi.org/10.1007/s10772-024-10135-3>

##### Conference Proceedings

1. Gouda, J. P., Kumar, S., & **Chittaragi, N. B.** (2025, March). College Electoral System Using Blockchain Technology. In 2025 3rd International Conference on Smart Systems for applications in Electrical Sciences (ICSSES) (pp. 1-6). IEEE.
2. Imbwaga, J. L., Koolagudi, S. G., & **Chittaragi, N. B.** (2025, February). Stroke detection using CNN and LIME explainability. In Data Science & Exploration in Artificial Intelligence: Proceedings of the First International Conference On Data Science & Exploration in Artificial Intelligence (CODE-AI 2024) Bangalore, India, 3rd-4th July, 2024 (Volume 1) (p. 423). CRC Press.
3. Yaji, S. G., **Chittaragi, N. B.**, & Koolagudi, S. G. (2025, February). Tomato leaf disease classification using transfer learning. In Data Science & Exploration in Artificial Intelligence: Proceedings of the First International Conference On Data Science & Exploration in Artificial Intelligence (CODE-AI 2024) Bangalore, India, 3rd-4th July, 2024 (Volume 1) (p. 201). CRC Press.
4. L. Imbwaga, J., **B. Chittaragi, N.**, & G. Koolagudi, S. (2023, December). Hate Speech Detection in Audio Using SHAP-An Explainable AI. In International Conference on Advanced Network Technologies and Intelligent Computing (pp. 289-304). Cham: Springer Nature Switzerland.
5. S. Singh, R. Kumari, S. Shukla, R. Kumar and **N. B. Chittaragi**, "Automatic Classification of Sober/Drunk through Iris Pattern Recognition," 2023 International Conference on Smart Systems for applications in Electrical Sciences (ICSSES), Tumakuru, India, 2023, pp. 1-6, doi: 10.1109/ICSSES58299.2023.10200473.
6. Joan L. Imbwaga, **Nagaratna Chittaragi**, and Shashidhar Koolagudi. 2022. Fake News Detection Using Machine Learning Algorithms. In Proceedings of the 2022 Fourteenth International Conference on Contemporary Computing (IC3-2022). Association for Computing Machinery, New York, NY, USA, 271–275. <https://doi.org/10.1145/3549206.3549256>
7. **Nagaratna B. Chittaragi**, Koolagudi, S.G. (2022). Kannada Dialect Identification from Case-Based Word Utterances Using Gradient Boosting Algorithm. Advanced Network Technologies and Intelligent Computing. ANTIC 2021. Communications in Computer and Information Science, vol 1534. Springer, Cham. [https://doi.org/10.1007/978-3-030-96040-7\\_51](https://doi.org/10.1007/978-3-030-96040-7_51)
8. **Nagaratna B. Chittaragi** and Shashidhar G. Koolagudi (2017). Acoustic features based word level dialect classification using SVM and ensemble methods. Tenth International Conference on Contemporary Computing (IC3), pages 1-6, IEEE, <https://doi:10.1109/IC3.2017.8284315>.
9. **Nagaratna B. Chittaragi** and Shashidhar G. Koolagudi (2020) Sentence-Based Dialect Identification System Using Extreme Gradient Boosting Algorithm. Smart Computing Paradigms: New Progresses and Challenges. Advances in Intelligent Systems and Computing, vol 766. Springer.
10. **Nagaratna B. Chittaragi**, Mothukuri, S. K. P., Hegde, P., Shashidhar G. Koolagudi (2018, October). Robust Dialect Identification System using Spectro-Temporal Gabor Features. In TENCON Region 10 Conference pages. 1589-1594. IEEE.
11. **Nagaratna B. Chittaragi**, Limate, A., Chandana, N. T., Annappa, B., and Koolagudi, S. G. (2019). Automatic text-independent Kannada dialect identification system. In Information Systems Design and Intelligent Applications, pages 79-87. Springer.

12. Akash R. Choudhury, **Nagaratna B. Chittaragi** and Shashidhar G. Koolagudi," Dialect Recognition System Using Excitation Source Features," 2018 15th IEEE India Council International Conference (INDICON), Coimbatore, India, 2018, pp. 1-6.
13. **Nagaratna B. Chittaragi** and Shashidhar G. Koolagudi, Spectral Feature Based Kannada Dialect Classification from Stop Consonants. Pattern Recognition and Machine Intelligence. PReMI 2019. Lecture Notes in Computer Science, vol 11941. Springer.
14. K S, Chandra Prabha, **Chittaragi, N. B.**, Pushpa, G., Venkataram, P. (2016, July). Context based in-patient monitoring system. In Applied and Theoretical Computing and Communication Technology (iCATccT), 2016 2nd International Conference on (pp. 211-215). IEEE.
15. Tripathi, A., Changmai, B., Habib, S., **Chittaragi, N. B.**, Koolagudi, S. G. (2017, August). Normalized videosnapping: A non-linear video synchronization approach. In Contemporary Computing (IC3), 2017 Tenth International Conference on (pp. 1-6). IEEE.
16. Mohan, A., Dhir, R., Hirashkar, H., **Chittaragi, N. B.**, Koolagudi, S. G. (2018, August). Matching Witness Account with Mugshots for Forensic Applications. In 2018 Eleventh International Conference on Contemporary Computing (IC3) (pp. 1-5). IEEE.
17. T M, Prajwala., Pranathi, A., SaiAshritha, K., **Chittaragi, N. B.**, Koolagudi, S. G. (2018, August). Tomato Leaf Disease Detection Using Convolutional Neural Networks. In 2018 Eleventh International Conference on Contemporary Computing (IC3) (pp. 1-5). IEEE.
18. Charitha S, **Chittaragi N B**, Koolagudi S G, (August 2018) Extractive Document Summarization Using a Supervised Learning Approach, IEEE International Conference on Distributed Computing, VLSI, Electrical Circuits and Robotics (DISCOVER), IEEE.
19. S. K. P. Mothukuri, P. Hegde, **N. B. Chittaragi** and S. G. Koolagudi (2020) "Kannada Dialect Classification using Artificial Neural Networks," 2020 International Conference on Artificial Intelligence and Signal Processing (AISP), Amaravati, India, pp. 1-5,
20. Hegde, P., **Chittaragi, N. B.**, Mothukuri, S. K. P., & Koolagudi, S. G. (2019, December). Kannada Dialect Classification Using CNN. In International Conference on Mining Intelligence and Knowledge Exploration (pp. 254-259). Springer.
21. G. Narayanan, R. Narayanan, N. Haneef, **N. B. Chittaragi** and S. G. Koolagudi, (2019, October) "A Novel Approach to Video Steganography using a 3D Chaotic Map," TENCON IEEE Region 10 Conference (TENCON), Kochi, India,

Editor/ Reviewer of Journal

- Multimedia Tools and Applications
- International Journal of Speech Technology
- International Journal of Information Technology

- Journal of Natural Language Processing
- International Journal of Artificial Intelligence (IJ-AI)

#### Patents

- “A System And Method For An Authentication And Fraud Detection”, by Nagaratna B Chittaragi, Vinay M B, Manjunath B, Sujay Kumar, Divyashree KS, Applicant :Siddaganga Institute of Technology,
- A System And Method For An Authentication And Fraud Detection, Shashidar G Koolagudi, Nagaratna B Chittaragi, Shiva Swaroop M, Sri Charan Reddy, Umesh Sai R,
- Applicant: National Institute of Technology Karnataka
- Engineering and Technology
- Approved
- Filed :2021-09-03
- Published: 2023-10-03

#### Invited Lectures, talks and workshops

##### Workshops:

- Faculty Development Program on AI-Driven Autonomous Drone Organized by Department of Aerospace Engineering, Indian Institute of Science, Bangalore, 5 Days from 07/02/2025 to 12/02/2025
- Cyber Security : Storage System Architecture and File System Forensics Organized by SIT and AICTE FDP (ATAL), 5 Days from 13/09/2021 to 17/09/2021
- WISP – 2015: A workshop on Image and Speech Processing organized by IIIT Hyderabad
- WISSAP – 2016: A Winter School on Speech and Audio Processing organized by SSN College of Engineering, Chennai in January 2016.
- FDP-2016: FDP organized by NIT Warangal in November 2016
- WISSAP – 2017: A Winter School on Speech and Audio Processing organized by IISc, Bangalore, Bangalore in January – 2017.
- A Workshop on Project Based Experimental Learning for Engineering Education organized by NITK, Surathkal in January 2018
- Women in Technology Summit (WITS) organized by IEEE NITK Surathkal in December 2018.

##### List of NPTEL Courses completed

- Affective Computing,

- Edge Computing
- Generative AI and Large Language
- Big Data Computing
- Google Cloud Computing Foundations
- The Joy Of Computing Using Python
- Deep Learning
- Data Science for Engineers
- Machine Learning For Soil And Crop Management
- Accreditation and Outcome Based Learning