



Dr. Praveen Kumar P S

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Summary

Dynamic and results-driven AI/ML professional with PhD in Machine Learning, offering over 13 years of diverse R&D experience and 7 years of specialized expertise in AI/ML/Data Science. Proficient in crafting cutting-edge solutions using advanced techniques like deep learning, machine learning, and artificial intelligence. Proven track record of successfully leading intricate projects, orchestrating cross-functional teams, and delivering exceptional outcomes. My extensive skill set, honed through years of R&D work and enriched by the knowledge gained during my PhD, uniquely positions me at the forefront of the industry. Fluent in English, Hindi, and Kannada, I excel in communication and interpersonal skills, fostering effective collaboration within cross-functional teams. As a PhD fresher, I am enthusiastic about leveraging my expertise, staying at the forefront of AI/ML advancements, and making a transformative impact in a dynamic environment. Actively engaged in staying up-to-date with AI/ML/Data Science advancements and maintaining a strong network within prestigious professional organizations. A passionate problem-solver, ready to apply my expertise and drive impactful solutions for the team's success.

Experience

January 2021 – Present

Organization: SIT (R&D), Tumakuru.

Client: Nixbees Technologies.

Designation: Senior Research Associate-II

Ongoing Projects:

- Currently involved in a project focused on the forensic application of AI/ML for gender detection using the femur bone.
- Actively contributing to an ongoing project developing an AI-based automatic biometric boarding system for airports.

Key Roles and Responsibilities:

- Designing and developing scalable AI and machine learning applications for clients.
- Researching and testing machine learning algorithms and predictive models.
- Conducting statistical analysis and improving models based on test findings.
- Leading and mentoring a team, ensuring successful task completion.

Skills/IDEs/Libraries: AI/ML, Deep Learning, NLP, RNN, LSTM, CNN, Jupyter, Python, NumPy, Scikit-learn, Pandas, TensorFlow, Keras.

Technical Skills:

Programming Languages:
Python, MATLAB, C.

Technology/Toolkits/IDEs:
Artificial Intelligence, Machine Learning, Data Science, Natural Language Processing, Kaldi, PyCharm, Jupyter, Anaconda.

AI/ML Libraries:
NumPy, Pandas, Scikit-learn, TensorFlow, Keras, Matplotlib, NLTK.

Operating systems:
Windows 8, Windows 10, Windows 11, Ubuntu 18.04, Ubuntu 20.04, Ubuntu 22.04.

June 2016 – December 2020 Organization: SIT (R&D), Tumakuru.

Designation: Senior Research Associate

Projects Worked:

- Analysis of Speech Signal Transmission using non-spread spectrum-based radios. (**Client:** Centre for Artificial Intelligence and Robotics (CAIR)-DRDO Government of India)
- Solar Powered Voice based automatic ration distribution system using Artificial Intelligence Algorithms for Smart Village. (**Client:** Vision Group on Science and Technology (VGST), Government of Karnataka.)
- Speech Based Access of Agricultural Commodity Prices and weather information in 12 Indian languages. (**Client:** Ministry of Electronics and Information Technology (MeitY), Government of India.)

Key Roles and Responsibilities:

- Collected speech data from 3000 speakers in controlled and uncontrolled environments.
- Developed interactive voice response system (IVRS).
- Implemented speech enhancement algorithms using AI and deep learning techniques.
- Created automatic speech recognition models for degraded and enhanced speech data using DNN and RNN-LSTM algorithms.

Skills/IDEs/Libraries: AI/ML, Deep Learning, NLP, PyCharm, Jupyter, Python, TensorFlow, Keras, MATLAB, Kaldi.

September 2010 - May 2016 Organization: CIT (R&D), Gubbi.

Designation: Project Coordinator/Manager.

Key Roles and Responsibilities:

- Orchestrating seamless implementation of cutting-edge technologies for projects and research endeavours, ensuring successful knowledge transfer.
- Conducting meticulous project evaluations, optimizing efficiency and outcomes.
- Collaborating with the placement and training department to equip candidates with the skills needed to excel in corporate environments.
- Spearheading coordination efforts for prestigious national and international conferences.
- Facilitating impactful events through expert coordination and management.

Membership of Professional Bodies:

- Life-time member of Indian Society for Technical Education [ISTE].
- Life-time member of Institute of Scholars (InSc).

Personal Information:

Permanent Address:

Behind government hospital, S
B extension, 2nd cross,
“Shambu Nilaya”, Gubbi,
Tumkur district, Karnataka,
India - 572216.

Date of Birth:

22nd July 1985

Nationality:

INDIAN

Languages Known:

English, Hindi and Kannada

Marital Status: Married

June 2009 – July 2010

Organization: Indian Space Research Organization (ISRO)/ ISRO Telemetry, Tracking and Command Network (ISTRAC).

Designation: Project Trainee

Key Roles and Responsibilities:

Associated with the project “CHANDRAYAAN”

Education

PhD
2017-2023

Research title: “Continuous Speech Recognition for Kannada Dialect Under Uncontrolled Environment”

Course Type: Full-Time (Regular)

University: Visvesvaraya Technological University, Belagavi, Karnataka, India.

Key Research Contributions:

- Pioneered an end-to-end spoken query system (SQS) for continuous speech, assessing offline and online performance of the system.
- Developed a cutting-edge automatic speech recognition (ASR) system using Kaldi SR toolkit.
- Created a comprehensive database for large vocabulary continuous speech.
- Innovated hybrid speech enhancement techniques using DCT in the modulation domain.
- Implemented advanced AI algorithms for speech enhancement, surpassing state-of-the-art methods.

Skills/Toolkits/Libraries: AI/ML, DNN, NLP, RNN, LSTM, Kaldi, MATLAB, TensorFlow, Keras.

M.Tech
2008-2010

Branch: Electronics and Communication Engineering.

Domain: Signal Processing.

College: Siddaganga Institute of Technology, Tumakuru, Karnataka, India.

University: Visvesvaraya Technological University, Belagavi, Karnataka, India.

Result: CGPA: 8.23 [FCD]

B.E
2003-2007

Branch: Electronics and Communication Engineering.

College: Channabasaveshwara Institute of Technology, Gubbi, Karnataka, India.

University: Visvesvaraya Technological University, Belagavi, Karnataka, India.

Result: 64.24% [FC]

Class XII
2001-2003

Domain: PCME

College: Sarvodaya pre-university college, Tumkur, Karnataka, India.

Board: Karnataka State Pre-university Board.

Result: First Class with Distinction (83%)

Class X
2000-2001

School: Mycemco Junior College, Ammasandra, Tumkur, Karnataka, India.

Board: Karnataka Secondary Education and Examination Board.

Result: First Class with Distinction (81%)

Professional Achievements/Awards/Recognition

- Best performance team award.
- Research Excellence Award from Institute of Scholars (InSc).
- Young Researcher Award from Institute of Scholars (InSc).
- Reviewer for International Journal of Electronics Electrical and Communication Engineering.

Certifications

- Machine Learning with Python (Authorized by IBM).
- Machine Learning (Authorized by Stanford University and DeepLearning.AI)
- Practical Machine Learning (Artificial Intelligence) with TensorFlow.
- Deep Learning Specialization (Authorized by DeepLearning.AI)
- Data Science (Authorized by IBM).
- Tools for Data Science (Authorized by IBM).
- Data Science Specialization (Authorized by Johns Hopkins University)
- Data Science for Engineers.
- Python for Data Science, AI and Development (Authorized by IBM).
- Google Cloud, Big Data and Machine Learning (Authorized by Google Cloud).
- Problem solving through Programming in C.

Papers Published

International Journals

- [1] P. S Praveen Kumar and H. S. Jayanna, "Hybrid Speech enhancement by using DCT in Modulation Domain," Circuits, Systems, and Signal Processing, (Springer, Quartile-1 Journal) (Accepted for publication)
- [2] P. S. Praveen Kumar and H. S. Jayanna, "Development of Speaker-Independent Automatic Speech Recognition System for Kannada Language," Indian Journal of Science and Technology, (Web of Science) vol. 15, issue. 8 pp. 333–342, 2022.
- [3] P. S. Praveen Kumar and H. S. Jayanna, "Continuous Kannada speech recognition system under degraded condition," Circuits, Systems, and Signal Processing, (Springer) vol. 39, pp. 391–419, 2020. (Quartile-1 Journal)
- [4] P. S. Praveen Kumar and H. S. Jayanna, "Creation and instigation of triphone based big-lexicon speaker-independent continuous speech recognition framework for Kannada language," International Journal of Innovative Technology and Exploring Engineering (IJITEE) (Elsevier Scopus Indexed), vol. 9, 2019.
- [5] P. S. Praveen Kumar and H. S. Jayanna, "Development of Speaker-Independent Automatic Speech Recognition System for Kannada Language," Speech Communication (Elsevier Quartile-1 Journal) (Communicated)
- [6] P. S. Praveen Kumar and H. S. Jayanna, "Speech Enhancement by Combining Kalman filter and MMSE technique in Modulation domain using DCT," Journal of Speech Technology (Springer Quartile-2 Journal) (Communicated)
- [7] Praveen Kumar P S and Veena Kumari H M "The FBM approach for the synthesis of EEG signals", International journal of emerging trends in signal processing, ISSN (2319-9784), vol.1, issue- 4, Aug. 2013.
- [8] Praveen Kumar P S and Veena Kumari H M "An advanced enhancement approach for high contrast images of digital cameras", International Journal of Research in Electronics, electrical and Communication Engineering, vol.5, issue-2, Jan 2013.
- [9] Praveen Kumar P S and Veena Kumari H M "Image fusion technique using wavelet transform for multiple application" International Journal on Advanced Computer Theory and Engineering (IJACTE) ISSN (Print): 2319-2526 vol. 2 issue 6, Jul 2012

International Conference

- [1] Praveen Kumar P S, H S Jayanna, et.al "Speech Emotion Recognition", in proceedings of 2022 IEEE North Karnataka Subsection Flagship International Conference (NKCon), Vijayapura, India, Nov 20-21, 2022.
- [2] Praveen Kumar P S and H S Jayanna, "Creation and Instigation of Triphone based Big Lexicon Speaker Independent Continuous Speech Recognition Framework for Kannada Language", in proceedings of International Conference on Contemporary Researches in Engineering, Science, Management & Arts (ICCRESMA), Powered By CRT, NFED, Coimbatore, Tamil Nadu, India, 27-29 January 2022.
- [3] Praveen Kumar P S and H S Jayanna, "Creation and Instigation of Triphone based Big Lexicon Speaker Independent Continuous Speech Recognition Framework for Kannada Language", in proceedings of 3rd IEEE International Conference on Data Engineering and Communication Systems, RNS Institute of Technology, Bengaluru, India, Dec 19-20, 2019.

- [4] Praveen Kumar P S and H S Jayanna, "Performance Analysis of Hybrid Automatic Continuous Speech Recognition Framework for Kannada Dialect", in proceedings of 10th IEEE International Conference on Computing, Communication and Networking Technologies (ICCCNT), IIT Kanpur, India, July 6-8, 2019.
- [5] Praveen Kumar P S, Thimmaraja Yadava G and H S Jayanna, "Text Independent Speaker Identification: A Review", in proceedings of IEEE Int. Conf. on Second IEEE International Conference on Emerging Computation and Information Technologies (ICECIT-2017), SIT, Tumkur, Dec. 2017.
- [6] Thimmaraja Yadava G, Praveen Kumar P S and H. S. Jayanna, "An End-to-End Spoken Dialogue System to Access the Agricultural Commodity Price Information in Kannada Language/Dialects", in proceedings of IEEE Int. Conf. on Second IEEE International Conference on Emerging Computation and Information Technologies (ICECIT-2017), SIT, Tumkur, Dec. 2017.
- [7] Praveen Kumar P. S. & Veena Kumari H M. "An advanced enhancement approach for high contrast images of digital cameras" The 1st International Conference on "communication, VLSI and Signal Processing –ICCVSP-2013" held at S.I.T., Tumkur, Karnataka, India Tumkur, Dec. 2017.
- [8] Praveen Kumar P. S. & Prashanth Kumar G. "Moving object detection and segmentation from video sequence using motion detection" The 1st International Conference on "communication, VLSI and Signal Processing –ICCVSP-2013" held at S.I.T., Tumkur, Karnataka, India.
- [9] Praveen Kumar P. S. & Jayaram D. N., "Evaluation Of TDOA/FDOA Techniques for Position Location" 2nd International Conference on Signal Processing Systems (ICSPS 2010)" held at Dalian, China on July 2010.
- [10] Praveen Kumar P. S. & Jayaram D. N. "Advanced Signal Processing techniques for Position location" The 1st International Conference on "Emerging Trends in Signal Processing and VLSI Design" held at Guru Nanak Engineering College, Ibrahimpatnam, Andhra Pradesh, India

Book Chapter

P. S. Praveen Kumar and H. S. Jayanna, "Development of Automatic Speech Recognition System for Kannada Language," Elsevier book chapter, (Communicated)

Training programmes/Seminars/Symposiums/workshops_____

- Training on Overview of "Speech Processing" organized by AICTE Training and Learning (ATAL) Academy, (IIT Dharwad).
- Training on Overview of "Recent Trends in Machine Learning and Pattern Recognition", organized by AICTE Training and Learning (ATAL) Academy, (GMIT, Davanagere).
- Hands on Superpowers with TensorFlow by Jason Mayors, organized by department of Computer Science and Engineering (AI and ML), Jain University in association with "The Turing Club".
- Training on "Deep Learning for Audio and Speech Processing" organized by AICTE Training and Learning (ATAL) Academy. (KLE Technological University).
- Training on "Research Trends in Computer Vision and Natural Language Processing", organized by AICTE Training and Learning (ATAL) Academy. (The North Cap University).
- Training on "Artificial Intelligence and Machine Learning with Data Science", organized by AICTE Training and Learning (ATAL) Academy (Babasaheb Naik College of Engineering)

Declaration_____

I hereby declare that all the information provided above is correct to the best of my knowledge.

Date:
Place:

[PRAVEEN KUMAR P S]