




Dr. Pushkar Gole

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Dedicated Ph.D. holder in Computer Science with expertise in Artificial Intelligence, Computer Vision, Digital Image Processing, Deep Learning, and Blockchain. Committed to advancing research and fostering an engaging learning environment for students. Passionate about contributing to academia through innovative teaching and impactful research.

Education

- **Ph.D. (Nov. 2019 – December 2024)**

Supervisor: Sr. Prof. Punam Bedi

Department of Computer Science, University of Delhi

UGC-NET-JRF (SRF) Scholarship

Thesis title: Lightweight and Few-Shot Image-based Plant Disease Diagnosis and Remedy Recommender System

Publications during Ph.D.:

- 3 SCIE indexed journal papers out of which 2 have 4.1 impact factor and 1 has 8.2 impact factor.
- Presented 2 conference papers in Scopus Indexed conferences and published a book chapter

- **M.Sc. Computer Science (July 2017 – June 2019)**

Department of Computer Science, University of Delhi

Aggregate: 79.95%

Project: Smart contract for Central Sector Scholarship (CSS) scheme

- **B.Sc. (H) Computer Science (July 2014 – May 2017)**

Keshav Mahavidyalaya, University of Delhi

Aggregate: 86.30%

Work experience

- **Teaching Assistant (December 2020 – May 2024)**

Department of Computer Science, University of Delhi

- MCAC-202: Data Communication and Computer Networks
- MCAC-301: Cyber Security
- MCAE-506: Artificial Intelligence
- MCAE-404: Digital Image Processing
- MCSC-102: Artificial Intelligence

Skills

- **Area of Expertise (Specialization):** Deep Learning, Computer Vision, Explainable AI
- **Programming Languages:** C++, Java, Python, HTML, JavaScript, Java Server Pages (JSP), Solidity
- **Development Tools/Frameworks:** VS Code, IntelliJ, PyCharm, Jupyter Notebook, Remix Studio, Android Studio, Ganache, Truffle
- **Python Libraries:** Keras (Deep Learning), Pandas (Data Visualization), NumPy, Scikit-Learn

Research publications

Journal publications

- Punam Bedi, Surbhi Rani, Bhavna Gupta, Veenu Bhasin, and **Pushkar Gole (2024)**, “**EpiBrCan-Lite: A lightweight deep learning model for breast cancer subtype classification using epigenomic data**”, *Computer Methods and Programs in Biomedicine* 260, pp. 108553, Elsevier. DOI: 10.1016/j.cmpb.2024.108553. ISSN 0169-2607. (SCIE, Impact Factor: 4.9)
- Punam Bedi, Ningyao Ningshen, Surbhi Rani, **Pushkar Gole**, and Veenu Bhasin (2024), “**CT- γ -Net: A Hybrid Model Based on Convolutional Encoder-Decoder and Transformer Encoder for Brain Tumor Localization**”, *Journal of Data Science and Intelligent Systems*, Bon View Publishing. DOI: 10.47852/bonviewJDSIS42022514, eISSN: 2972-3841.
- Punam Bedi, **Pushkar Gole**, and Sudeep Marwaha (2024), “**PDSE-Lite: Lightweight Framework for Plant Disease Severity Estimation based on Convolutional Autoencoder and Few-Shot Learning**”, *Frontiers in Plant Science*, 14, pp. 1319894, Frontiers Media SA, DOI: 10.3389/fpls.2023.1319894, ISSN: 1664-462X, (SCIE, Scopus, Impact Factor: 4.1)
- **Pushkar Gole**, Punam Bedi, Sudeep Marwaha, Md. Ashraful Haque, and Chandan Kumar Deb (2023), “**TrIncNet: a lightweight vision transformer network for identification of plant diseases**”, *Frontiers in Plant Science*, 14, pp. 1221557, Frontiers Media SA, DOI: 10.3389/fpls.2023.1221557, ISSN: 1664-462X, (SCIE, Scopus, Impact Factor: 4.1)
- Punam Bedi and **Pushkar Gole** (2021), “**Plant disease detection using hybrid model based on convolutional autoencoder and convolutional neural network**”, *Artificial Intelligence in Agriculture*, 5, pp. 90-101, Elsevier, DOI: 10.1016/j.aiia.2021.05.002, Online ISSN: 2589-7217, (SCIE, Scopus, Impact Factor: 8.2). [Top cited paper in the journal since 2021 with 328 citations]
- Punam Bedi, Shivani Dhiman, **Pushkar Gole**, Neha Gupta, Vinita Jindal (2021), “**Prediction of COVID-19 trend in India and its four worst-affected states using modified SEIRD and LSTM models**”, *SN computer science*, 2, p. 224, Springer Nature, DOI: 10.1007/s42979-021-00598-5, Online ISSN: 2661-8907. (Scopus Indexed)

Conference publications

- **Pushkar Gole**, Punam Bedi, and Sudeep Marwaha (2023), “**Automatic Diagnosis of Plant Diseases via Triple Attention Embedded Vision Transformer Model**” In Hassanien, A.E., Castillo, O., Anand, S., Jaiswal, A. (Eds.), *International Conference on Innovative Computing and Communications (ICICC-2023)*, 17-18 February 2023, pp: 879-889, Delhi, India, Springer, Singapore, DOI: 10.1007/978-981-99-4071-4_67, (Scopus Indexed)
- Punam Bedi, Ningyao Ningshen, Surbhi Rani, and **Pushkar Gole** (2023), “**Explainable Predictions for Brain Tumor Diagnosis Using InceptionV3 CNN Architecture**” In Hassanien, A.E., Castillo, O., Anand, S., Jaiswal, A. (Eds.), *International Conference on Innovative Computing and Communications (ICICC-2023)*, 17-18 February 2023, pp: 125-134, Delhi, India, Springer, Singapore, DOI: 10.1007/978-981-99-4071-4_67, (Scopus Indexed)
- Punam Bedi, Tanisha Roy, Vidhi Arora, and **Pushkar Gole** (2023), “**Smart Contract based Skill Verification System for Recruitment**” In *Proceedings of the 2023 Fifteenth International Conference on Contemporary Computing (IC3-2023)*, 03-05 August 2023, pp. 147-152, Noida, India, Association for Computing Machinery, New York, NY, USA, DOI: 10.1145/3607947.3607973. (Scopus Indexed)
- Punam Bedi and **Pushkar Gole** (2021), “**PlantGhostNet: An Efficient Novel Convolutional Neural Network Model to Identify Plant Diseases Automatically**” In *2021 9th International Conference on Reliability, Infocom Technologies and Optimization (Trends and Future Directions) (ICRITO)*, 03-04 September 2021, pp. 1-6, Noida, India, IEEE, DOI: 10.1109/ICRITO51393.2021.9596543. (Scopus Indexed)
- Punam Bedi, **Pushkar Gole**, Shivani Dhiman, Neha Gupta, and Vinita Jindal (2020), “**Smart contract based central sector scheme of scholarship for college and university students**”: In S.M. Thampi, S. Madria, X. Fernando, R. Doss, S. Mehta & D. Ciuonzo (Ed.), *Third International Conference on Computing and Network Communications (CoCoNet'19)*, 18-21 December 2019, Part of *Procedia Computer Science*, vol. 171, pp. 790-799, Trivandrum, Kerala, India: *Procedia Computer Science*, Elsevier, DOI: 10.1016/j.procs.2020.04.085. (Scopus Indexed)

Book chapter

- Punam Bedi, **Pushkar Gole**, and Sumit Kumar Agarwal (2021), “**18 Using Deep Learning for image-based plant disease detection**”, Internet of Things and Machine Learning in Agriculture, pp. 369-402, De Gruyter, DOI: 10.1515/9783110691276-018, Online ISBN: 978-3-11-069122-1.

Communicated research papers

- Punam Bedi, **Pushkar Gole**, and Sudeep Marwaha (2024), “**AIDoctor-Plant: Lightweight and Bilingual Plant Disease Diagnosis and Remedy Recommender System**”, Communicated to **Discover Applied Sciences**, Springer Nature. [Major revision submitted on October 05, 2024]
- Punam Bedi, Vinita Jindal, Ningyao Ningshen, and **Pushkar Gole** (2024), “**DBESN: A novel model for detecting and identifying malicious code in a smart contract**,” Communicated to **Blockchain: Research and Applications**, Elsevier. [Major revision submitted on October 05, 2024]
- Md. Ashraful Haque, Chandan Kumar Deb, **Pushkar Gole**, Sayantani Karmakar, Akshay Dheeraj, Mehraj Ul Din Shah, Subrata Dutta, M. K. Prasanna Kumar, and Sudeep Marwaha (2024), “**An Enhanced Vision Transformer Network for Efficient and Accurate Crop Disease Detection**”, Communicated to **Expert Systems with Applications**, Elsevier.

Certifications

- Participated in the Faculty Development Program on **Cybersecurity, High Performance Computing, AI/ML, and GenAI**, organized by Delhi University Computer Center, University of Delhi. (October 4-6, 2023).
- Presented a conference paper titled “**Automatic Diagnosis of Plant Diseases via Triple Attention Embedded Vision Transformer Model**” at the International Conference on Innovative Computing and Communications (ICICC-2023) held on February 17-18, 2023.
- Presented a conference paper titled “**Explainable Predictions for Brain Tumor Diagnosis Using InceptionV3 CNN Architecture**” at the International Conference on Innovative Computing and Communications (ICICC-2023) held on February 17-18, 2023.
- Presented a conference paper titled “**PlantGhostNet: An Efficient Novel Convolutional Neural Network Model to Identify Plant Diseases Automatically**” at the 9th International Conference on Reliability, Infocom Technologies and Optimization (Trends and Future Directions) (ICRITO) held on September 3-4, 2021.
- Participated in a two-day workshop on **Cyber Security and Cyber Laws** organized by Shaheed Sukhdev College of Business Studies Institute of Cyber Security & Law and Department of Computer Science, University of Delhi. (March 25-26, 2019).

References

- **Prof. Punam Bedi (Senior Professor)**
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- **Prof. Vinita Jindal (Professor)**
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