Pushkar Gole

Ph.D. Research Scholar, Senior Research Fellow (SRF)
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Enthusiastic Ph.D. researcher with a strong academic background in Computer Science. Currently pursuing Ph.D., focusing on Artificial Intelligence, Computer Vision, Digital Image Processing, Blockchain, and Deep Learning. Eager to contribute to academia and seeking the role of an Assistant Professor to share my expertise and create an engaging learning experience for students.

Education

- **Pursuing Ph.D. (Nov. 2019 – Present)**
  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
  Stage of thesis: Thesis Submitted on 12 September 2024

- **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: 86.3%

Work experience

- **Guest Faculty for Computer Graphics (October 8, 2024 – Present)**
  Department of Computer Science, Kalindi College, University of Delhi
- **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, **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, (ESCI, Scopus, Impact Factor: 8.2). [**Top cited paper in the journal since 2021 with 264 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, and Neha Gupta 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), "**PlantD²R²S-Lite: Lightweight and Bilingual Plant Disease Diagnosis and Remedy Recommender System",** Communicated to **Artificial Intelligence in Agriculture, Elsevier.**
- 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.**
- 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**," Communicated to **Computer Methods and Programs in Biomedicine, 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)**
  Department of Computer Science, University of Delhi
  pbedi@cs.du.ac.in

- **Prof. Vinita Jindal (Professor)**
  Keshav Mahavidyalaya, University of Delhi
  vjindal@keshav.du.ac.in