



Tamanna Sood

Working with TalentGroGlobal and Nirogi TanMan in developing ecosystems for startups in healthcare

Brilliant Minds, TalentGroGlobal

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Tamanna Sood

Driven by dedication and passion for scientific R&D, and interest in learning new technologies and domains, I seek a research position at an organization that fosters collaboration and personal growth. This is an opportunity for me to leverage my 5+ years of experience as a resourceful AI engineer and researcher, specializing in enhancing ML and DL process modeling in computational biology. My working experience with diverse datasets demonstrates my hands-on expertise and in-depth knowledge of frameworks, libraries, and data structures. As a recognized team player with stellar problem-solving skills, I thrive in collaborative environments, contributing to a fulfilling career and organizational success.

SUMMARY

- Overall research experience of 5+ years in Artificial Intelligence, Machine Learning, Deep Learning, Computer Vision, Medical Image Analysis, and AI in healthcare and other applications.
- Expertise in ML and DL methodologies, with a focus on refining and optimizing existing processes
- Excel in working with a wide array of datasets and images, employing analytical skills to extract meaningful insights
- Experienced in using Python, Anaconda, and Pycharm on various Hardware platforms
- Hands-on experience with various ML and DL frameworks such as Tensorflow, Keras, Scikit-learn, and scikit-image among others
- Recognized for collaborative spirit and teamwork, actively contributing to cross-functional initiatives.
- Exhibit first-rate problem-solving abilities, tackling challenges with a strategic and analytical mindset.
- Prepared and maintained the technical documents such as standard operating procedure (SOP), report for the assigned scope, and initiated environment setup
- Qualified GATE 2017
- Qualified UGC-NET JRF 2018
- Organized and conducted various conferences, workshops, and Faculty Development Programs

Technical Skills

- **Areas of Interest:** Artificial Intelligence, Machine Learning, Deep Learning, Computer Vision, Generative AI, Healthcare, Medical Image Analysis, Bioinformatics, Computational Biology Prompt Engineering, Database Management Systems concepts, Automation Frameworks, Data Analytics, SQL, MATLAB
- **Programming Languages:** Python
- **Data Science:** NumPy, Pandas
- **Machine Learning/Deep Learning:** TensorFlow, Keras, Scikit-Learn, GANs
- **Computer Vision:** OpenCV, Scikit-image
- **Major Roles and Responsibilities:** Research and Development, Senior Research Fellow, Teaching Assistant: training and learning, Event organization and management

Education

Punjab Engineering College (Deemed to be University) | Chandigarh, India

July 2019- Present | **Ph.D., Computer Science**

July 2017- June 2019 | **M.Tech, Computer Science (CGPA: 9.65)**

University Institute of Engineering and Technology, Panjab University | Chandigarh, India

August 2012- June 2016 | **B.E., Information Technology (CGPA: 8.61)**

Convent of Jesus and Mary, Ambala Cantt, Haryana, India

May 2012 | **Class XII: 96%** (District Topper)

May 2010 | **Class X: CGPA: 9.8 (93.1%)**

Experience

RESEARCH EXPERIENCE

July 2019 – Present

Ph.D. RESEARCH SCHOLAR, CSE DEPARTMENT PUNJAB ENGINEERING COLLEGE (DEEMED TO BE UNIVERSITY)

- Diligently documented procedures and outcomes with a meticulous focus on precision, contributing to a high degree of accuracy in reporting.
- Currently immersed in the dynamic field of medical image analysis, employing cutting-edge deep learning techniques.
- Developed a novel noisy image augmentation technique for enhancing the classification of Cervical Cancer colposcopy images.
- Developed a novel bio-inspired feature selection method based on metaheuristic algorithms.
- Specializing in cancer detection and classification, I leverage my skills to make meaningful contributions to the advancement of healthcare.
- Proficiently apply computer vision and deep learning methodologies in my role, utilizing a range of frameworks, including OpenCV, Scikit-Image, TensorFlow, and Keras.
- Comprehensive understanding of image analysis and processing.
- Possess a robust knowledge base in a variety of advanced technologies, such as Reinforcement Learning, Convolutional Neural Networks (CNNs), Generative Adversarial Networks (GANs), Transfer Learning, Machine Learning, Computer Vision, and Image Processing.
- Deployment of various deep-learning models

JULY 2017- JUNE 2019

M.Tech, RESEARCH SCHOLAR, PUNJAB ENGINEERING COLLEGE (DEEMED TO BE UNIVERSITY)

- Scored 9.65 CGPA
- Worked on the classification of Parkinson' Disease using various Machine Learning and Deep Learning techniques.
- The classification was done based on the handwriting samples collected from Parkinson's Disease patients from PGIMER Chandigarh

INDUSTRY EXPERIENCE

July 2016- July 2017

ADVISORY ANALYST, DELOITTE

- Investigated and identified root causes of various challenges, demonstrating a keen problem-solving ability.
- Implemented quality assurance protocols, ensuring adherence to industry standards and fostering continuous process improvement.
- Utilized advanced database querying skills to extract pertinent information necessary for seamless report processing, showcasing proficiency in data management and analysis

Research Projects

- Classification of Diabetic Retinopathy using retinographs: Classified different grades of Diabetic Retinopathy using retinographs with the help of various attention models and Vision transformers.
- Fog removal from vehicular images using GANs: Demonstrated the use of generative adversarial networks for removing fog from vehicular images.
- Classification of deciduous and permanent teeth using X-ray images with Deep Learning: Classified the deciduous and permanent teeth in children's X-ray images with the help of transfer learning.
- Enhancing the Tomato and Potato Crop Health: A Novel Approach for Ensemble Deep Learning based Classification: Developed various Ensemble-based Deep learning models for the classification of diseases in potato and Tomato plants.
- Classification of Parkinson' Disease using various Machine Learning and Deep Learning techniques: Classified handwriting samples collected from Parkinson's Disease patients and healthy controls from PGIMER Chandigarh
- Spinal posture classification using MetaMotion R sensor: Classified spinal posture using sensor data from MetaMotion R sensor with the help of various machine learning models.

Research Publications

- Sood Tamanna, Padmavati Khandnor, Rajesh Bhatia, "Advancing Cervical Cancer Classification: Exploring the Power of Noisy Augmentation and CNN-Trans-Attention Network", Communicated. May 2024, Computers in Biology and Medicine, Elsevier, IF: 7.
- Sood Tamanna, Padmavati Khandnor, Rajesh Bhatia, "Cervical Cancer Classification in Pap Smear Images: A Hybrid Deep Learning Approach with Bio-inspired Feature Selection and Ensemble Classification", Communicated, April 2024, Soft Computing, Springer, IF: 4.1.

- Sood Tamanna, Wadhwa Ekamdeep Singh, "Enhancing the Tomato and Potato Crop Health: A Novel Approach for Ensemble Deep Learning based Classification", Book Chapter, (Accepted) in Smart Technologies for Next-Generation Agriculture: Transforming Farming with Deep Learning, IoT, and Blockchain. Bentham Science, November 2024.
- Jaiswal, M., Sharma, M., Khandnor, P., Goyal, A., Belokar, R., Harit, S., ... & Goyal, K. (2023). Deep Learning Models for Classification of Deciduous and Permanent Teeth from Digital Panoramic Images. Cureus, 15(12).
- Sood, Tamanna, Rajesh Bhatia, and Padmavati Khandnor. "Cancer detection based on Medical Image Analysis with the help of Machine Learning and Deep Learning Techniques: A Systematic Literature Review." Current Medical Imaging (2023), IF: 1.3.
- Sood, Tamanna, Rajesh Bhatia, Padmavati, "Recent trends and analysis of Generative Adversarial Networks in Cervical Cancer Imaging", 4th International Conference on Innovations in Communication Computing and Sciences 2022, Published in NeuroQuantology journal (Scopus indexed)
- Sood, Tamanna, and Padmavati Khandnor. "Classification of Parkinson's disease using various machine learning techniques." Advances in Computing and Data Sciences: Third International Conference, ICACDS 2019, Ghaziabad, India, April 12–13, 2019, Revised Selected Papers, Part I 3. Springer Singapore, 2019.

Core Proficiencies

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| <ul style="list-style-type: none"> • Eager to learn new technologies • Analytical thinking • High-impact Communication • Problem-Solving | <ul style="list-style-type: none"> • Collaborative Team Player and leader • Great at event management and organization • Extensive stage-handling experience • Decision Making |
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Workshops/FDPs/ Conferences

- Conducted training workshop at Chandigarh University on "Fundamentals of Deep Learning", February 2019: **Trainer**
- AICTE Training and Learning (ATAL) Academy-sponsored 6-Days Faculty Development Programme on "Deep Learning: Fundamentals and Case Studies in Healthcare." 8th -13th Jan 2024 – **Organizer** and **Speaker**
- 1st INTERNATIONAL CONFERENCE ON ARTIFICIAL INTELLIGENCE, COMPUTING, IOT, AND DATA ANALYTICS, held at Punjab Engineering College (Deemed to be University), 18th -20th December 2023 - **Organizer**
- DST-SERB sponsored high-end workshop "KARYASHALA" on "Cryptocurrency and Blockchain Technology: Fundamentals, Programming, and Case Studies", 10th -14th July 2023 – **Organizer** and **Participant**
- Workshop on "Intellectual Property Rights" organized under 'CSIR Integrated Programme by CSIR- Central Scientific Instruments Organization (CSIR-CSIO), Chandigarh on 12th March, 2021. : **Participant**
- Data Science in Stratified Healthcare and Precision Medicine – May 2020- Coursera