



Subhag Sharma

Roll No.: 2025PCS0042

M.Tech - Computer Science and Engineering

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EDUCATION

- Indian Institute of Technology Jammu** 2025 – 2027 (Expected)
M.Tech in Computer Science and Engineering CGPA: 8.79 (Current) Jammu, India
- Shri Mata Vaishno Devi University** 2020 – 2024
B.Tech in Computer Science and Engineering CGPA: 8.91 Jammu, India
- Delhi Public School** 2020
Class XII Percentage: 93% Jammu, India
- Delhi Public School** 2018
Class X Percentage: 93.4% Jammu, India

EXPERIENCE

- NIMS University** Jun 2024 – Aug 2024
Research Associate Jaipur
 - Assisted and carried out research work under the MARIK School of Artificial Intelligence and Machine Learning, an initiative by the Czech Government and NIMS, focusing on Medical Images.
 - Assisted with training on the latest technologies for the larger benefit of the students.
- Indian Institutes of Technology, Ropar** Apr 2024 – Jun 2024
Intern Ropar, Punjab
 - Engaged in cutting-edge medical image processing and segmentation research at IIT Ropar, an institution of national importance, contributing to innovative advancements in healthcare technology.
 - Committed to pushing boundaries and delivering impactful solutions in an evolving learning environment.
- Jammu & Kashmir e-Governance Agency (JaKeGA)** Oct 2023 – Mar 2024
Intern Jammu, J&K
 - Created an RBSK (Rashtriya Bal Swasthya Karyakram) database & application as Team Lead for 2.7M students in 29K schools, revolutionizing healthcare with centralized records.
 - Engineered a proprietary OCR software to streamline transformation of scanned official documents into text, enhancing accessibility for the disabled community and increasing document digitization by 50%.

PROJECTS

- Multiple Sclerosis Lesion Segmentation in Brain MRI**
Using SOTA U-Net Architectures with Deep Feature Extraction Backbone | TensorFlow, Keras, OpenCV, PyDicom, PIL
 - This novel work aids in early diagnosis and treatment of this rare neurological disease, potentially enhancing quality of life for affected individuals.
 - Performed comprehensive evaluation of various U-Net and deep feature extraction backbone combinations (ResNet, DenseNet) for MS lesion segmentation in brain MRI, identifying optimal configurations to enhance diagnostic precision.
- Classification of CESM Breast Images for Probable Cancerous (Malignant) Cases**
Using Subtracted Images | TensorFlow, Keras, OpenCV
 - Collaborated with a radio oncologist to validate results derived using Transfer Learning, Saliency Heatmapping and GradCam, achieving performance metrics that surpass a standard radiologist.
 - After completion, the project aims to help women with probable cancerous lumps detect them quickly without requiring stat biopsies.

PUBLICATIONS

•Analysis of EEG Signals for Deceit Identification Using Various Supervised Learning Methods

Published in Scopus Indexed LNNS by Springer | DOI: 10.1007/978-981-97-0641-9_12

- Discusses the role of Machine Learning in analyzing EEG to use brain signals for lie detection, with results at par with established physical formats of interrogation.

•Early Detection of Alzheimer’s Disease Using Advanced Machine Learning Techniques – A Comprehensive Review

Published in Scopus Indexed SIST | DOI: 10.1007/978-981-99-5180-2_37

- Establishes prognostic measures for Alzheimer’s Disease (affecting 73% of population aged 75+) using multiple modalities as inputs for state-of-the-art ML models.

•Intelligent Diagnosis of Autism Spectrum Disorder: Harnessing ML for Enhanced Early Detection

Published in Scopus Indexed LNNS by Springer (IC3S Proceedings) | DOI: 10.1007/978-981-97-2550-2_27

- Developed a standardized questionnaire accessible via a mobile application, with background algorithms trained on a vast dataset for ASD detection.

•Revolutionizing Breast Cancer Detection: A Shallow Neural Network Approach for Classification in Mammographic Scans

Published in Scopus Indexed Handbook of Deep Learning Models for Healthcare Data Processing | DOI: 10.1201/9781003467281

- Highlights the role of lightweight CNNs in comparison with heavy models, beating standardized benchmark results for calcification and mass classification.

•Advances in Computer-Aided Detection and Diagnosis of Retinal Diseases: A Comprehensive Survey of Fundal Image Analysis

Published in Scopus Indexed Lecture Notes in Networks and Systems (LNNS) by Springer

- Proposes a single CNN network that outperforms heavyweight models by classifying multiple retinal diseases simultaneously.

•Plant Leaf Disease Classification Using Knowledge Distillation Methodologies

Presented at CVIP 2024 | To be published in Scopus Indexed CCIS by Springer

- Developed lightweight CNNs (as co-author/guide) for deployment in remote, resource-constrained areas to enable early detection and treatment of plant diseases in agrarian-dependent countries like India.

TECHNICAL SKILLS

- **Languages:** C, C++, Python, Java, SQL
- **Technologies:** TensorFlow, PyTorch, Keras, Pandas, Scikit-Learn, AWS, Google Cloud Platform, LaTeX
- **Concepts:** Compiler Design, Operating Systems, Virtual Memory, Cache Memory, Encryption/Decryption, Artificial Intelligence, Machine Learning, Neural Networks, Database Management, Cloud Computing

CERTIFICATIONS

- **Cloud:** Google Cloud Infrastructure: Core Services; Google Cloud Fundamentals: Core Infrastructure; Essential Google Cloud Infrastructure: Foundation
- **Machine Learning:** Supervised Machine Learning: Regression and Classification; Advanced Learning Algorithms; Unsupervised Learning, Recommender Systems & Reinforcement Learning; AI for Medicine

ACHIEVEMENTS

- All India Rank **911** in GATE CS/IT 2024 out of 1,70,825 candidates. 2024
- Awarded Certificate of Distinction for being the best student in Academics, Co-Curricular & Extra-Curricular activities for the batch of 2024. 2024
- Stood **First** in Cybersecurity Hackathon HackDefy organized by the Government of J&K.
- Finished **Second** in AgriThon, an Agriculture Innovation Hackathon organized by SKUAST.

POSITIONS OF RESPONSIBILITY & SOCIAL ENGAGEMENTS

- ML Co-Lead**, Google Developer Student Council (GDSC)
- Organising Committee Member**, International Conference on Computing, Communications, and Cyber-Security
- Organiser**, Two Faculty Development Programs with speakers from prestigious institutes in India and abroad on Image Processing and Machine Learning
- Volunteer**, National Social Service (NSS)