KHUSHI JINDAL

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Examination	University	Institute	Year	GPA/%
Graduation	IGDTUW, Delhi	Indira Gandhi Delhi Technical University for Women, Delhi	2023 - Current	8.00
Under Graduation	GGSIPU, Delhi	HMR Institute of Technology and Management, Delhi	2020-23	9.53

** GPA: out of 10 (best possible grade)*

RESEARCH INTERESTS

* Multi-Modal Learning * Medical Signal/Imaging Analysis * AI for Healthcare * Deep Learning

EXPERIENCE

- **Council of Scientific and Industrial Research - Institute of Genomics and Integrative Biology (CSIR-IGIB)**
  Master's Dissertation Trainee [Advisors: ***Dr. Jitendra Narayan*** *and* ***Prof. D.K.Tayal]*** *(Aug'24-Dec-24)*
  Advancing Autism Spectrum Disorder Detection through Interpretable Machine Learning and Explainable AI Techniques
  - **Autism Screening Adult Dataset**, *link*
    - Developing a framework for Autism spectrum disorder (ASD) detection utilizing Interpretable machine learning (IML) and Explainable AI (XAI) techniques.
    - Discovering a correlation between jaundice at birth and an increased likelihood of developing ASD, underscoring the importance of early clinical interventions.
    - Authored a research paper identifying gaps in the existing literature, emphasizing outlier-driven methods and hyperparameter tuning to enhance early diagnosis of ASD.
    - Aimed to foster trust in AI applications within healthcare by improving model transparency, thereby enhancing the accuracy and reliability of ASD predictions.

- **Indira Gandhi Delhi Technical University for Women (IGDTUW), Delhi**
  Summer Intern [Advisor: ***Prof. Seeja K.R.****]* *(Jun'24-Jul-24)*
  - **Alzheimer Disease Detection using Deep Learning Approaches in MRI Imaging**
    - Developed a predictive model to determine the presence or absence of tumors in MRI images, contributing to early diagnosis of Alzheimer's disease.
    - Conducted comprehensive research and authored a review paper on Alzheimer's detection, exploring traditional and advanced machine learning and deep learning techniques.
    - Designed a deep learning pipeline incorporating CNN architectures such as ResNet, DenseNet, and VGG-16 to enhance prediction accuracy utilizing brain MRI data.
    - Focused on improving diagnostic precision through early tumor detection in MRI images, thereby contributing to advancements in Alzheimer's disease diagnosis.

- **Defence Research and Development Organisation- Solid State Physics Laboratory (DRDO-SSPL), Delhi**
  ML Research Intern *(Jul'22-Sept'22)*
  - **Attendance Logging Using Biometric Recognition**
    - Acquired comprehensive knowledge of biometric recognition techniques, focusing on their application in security systems.
    - Designed and implemented a robust face recognition attendance system for the Defence Research and Development Organisation (DRDO), significantly enhancing security and accuracy in attendance tracking.
    - Developed the attendance system utilizing Python, OpenCV, and deep learning libraries, which automated attendance logging while ensuring high levels of data integrity and security.
    - Conducted thorough performance testing and validation of the system, and delivered user training to ensure smooth deployment and optimal user adoption.

- **Guru Gobind Singh Indraprastha University (GGSIPU), Delhi** , *Undergraduate Thesis* *(Jan'23 – Jun'23)*
  - **Securing ATM Transaction Security through Two- factor Authentication**
    - Developed a deep learning-based ATM transaction system for face detection, enabling real-time biometric authentication to enhance security.
    - Integrated dual authentication methods—facial recognition and PIN verification—to create a robust security model, effectively preventing unauthorized access and reducing fraud risks.
    - Implemented a secure database for user information and transaction logs, ensuring data integrity and compliance with privacy standards while enabling efficient transaction management.

PROJECTS

- **Adaptive Lung Cancer Diagnosis System** | *EfficientNetB0, ResNet50, InceptionV3, Transfer Learning*
  - Precision-Based Approach Using CNN and Transfer Learning for Enhanced Lung Cancer Diagnostics.
  - Applied transfer learning with pre-trained models (EfficientNetB0, ResNet50, InceptionV3), achieving high classification accuracy on histopathological images.
- **Image Super-Resolution Using GANs** | *Image Enhancement*
  - Developed SRGAN model with advanced RDN and RRDN structures, enhancing image resolution and visuals.
  - Used pre-trained weights and fine-tuned hyperparameters to improve training efficiency and output quality.

SELECTED PUBLICATIONS

- **Integrating Facial Image Data for Autism Identification: A Comparative Evaluation of Deep Learning Classifiers**, *Paper Under Review*
  Khushi Jindal*, Jitendra Narayan, D.K. Tayal
  International Conference on Signal Processing and Communication'2025
- **Enhancing Autism Spectrum Disorder Using Classification and Ensemble Approaches: A Study on Hyperparameter Tuning and Outlier Detection**, *Paper Accepted*
  Khushi Jindal*, D. K. Tayal, Jitendra Narayan
  Doctoral Symposium On Computational Intelligence'2025
- **Advancements in Alzheimer's Disease Detection: A Comprehensive Review of Deep Learning Approaches in MRI Imaging**, *Paper Accepted*
  Khushi Jindal*, Seeja K. R., D. K. Tayal
  International Conference on Artificial Intelligence and Speech Technology 2024
- **Harnessing AWS for Transaction Monitoring: A Comprehensive Study on Cloud-Based Anomaly Detection**, *Paper*
  Khushi Jindal*, Kusum Sharma*, Muskan Tomar*, SRN Reddy
  International Journal of Innovative Science and Research Technology'2024
- **Securing ATM Transactions Using Double Authentication**, *Paper*
  Khushi Jindal*, Nimit Jain*, Aman Karn*, Nikhil*, Pratibha Sharma
  International Conference on Data Analytics Management'2023

** indicates equal contribution | Full publication list at Google Scholar*

TECHNICAL SKILLS

- **Programming Languages**: Python, C++, SQL, HTML, CSS, SQL.
- **Frameworks**: Pandas, NumPy, Matplotlib, Scikit-learn, TensorFlow, PyTorch.
- **Technologies & Tools**: IBM Cognos Analytics, Canva, LaTeX, Microsoft Office Suite, Power BI, Advanced MS-Excel.

ACCOMPLISHMENTS

- Achieved 3rd rank in the undergraduate degree college, demonstrating academic excellence and dedication. *(Jul'23)*
- Finalist in Smart India Hackathon 2022, showcasing innovation and problem-solving skills at national level. *(Jun'22)*
- N.C.C. (National Cadet Corps) – 'B' and 'C' Certification with 'A' Grade *(Aug'17-Dec'21)*

LEADERSHIP EXPERIENCE

- Public Relations (PR) Head in Training and Placement Cell, IGDTUW, 2023- 2025
- Volunteered at CSIR-IGIB during Jigyasa- Open Day'24, interacting with high school students and encouraging them to pursue careers in research.
- Volunteered with the Art of Living Foundation, assisting in organizing wellness and meditation workshops in 2018

EXTRA CURRICULAR ACTIVITIES

- Provided tuition in Computer Science and Python programming to high school students.
- Awarded for excellence in Indian classical Kathak dance form at the school and college level competitions.
- Actively participated in sports, including Cricket, Lawn Tennis, Chess, and Carrom.

REFERENCES

- Dr. D.K. Tayal, Professor, IGDTUW
  Email: devendratayal@igdtuw.ac.in
- Dr. Jitendra Narayan, Senior Scientist, CSIR-IGIB
  Email: jnarayan@igib.in