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

* Computational Biology	* Medical Signal/Imaging Analysis	* AI for Healthcare	* Deep Learning

RESEARCH EXPERIENCE

- **Council of Scientific and Industrial Research - Institute of Genomics and Integrative Biology (CSIR-IGIB), Delhi**
  *Master's Dissertation Trainee [Advisors: **Dr. Jitendra Narayan** and **Prof. D.K.Tayal**]* *(Aug'24-Dec-24)*
  Autism Spectrum Disorder Detection through Interpretable Machine Learning and Explainable AI Techniques
  - **Autism Screening Adult Dataset**, *link*
    - Developing an ASD detection framework using Interpretable Machine Learning (IML) and Explainable AI (XAI) techniques.
    - Identifying a correlation between jaundice at birth and increased ASD risk, highlighting the need for early interventions.
    - Designing a hybrid machine learning model to improve prediction accuracy and robustness.

- **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**
    - Explored various neuroimaging modalities and benchmark datasets for Alzheimer's disease diagnosis.
    - Developed a CNN-based model to detect tumors in MRI images for early Alzheimer's detection.

- **Defence Research and Development Organisation- Solid State Physics Laboratory (DRDO-SSPL), Delhi**
  ML Research Intern *(Jul'22-Sept'22)*
  - **Attendance Logging Using Biometric Recognition**
    - Developed a face recognition attendance system, improving security and accuracy.
    - Built the system with Python, OpenCV, and machine learning to automate attendance logging.
    - Conducted testing and user training for smooth deployment.

- **Guru Gobind Singh Indraprastha University (GGSIPU), Delhi** , *Undergraduate Thesis* *(Jan'23 – Jun'23)*
  - **Securing ATM Transaction Security through Two- factor Authentication**
    - Implemented two-factor authentication for ATM transactions using facial recognition and PIN.
    - Developed a biometric system for user verification to prevent unauthorized access.
    - Ensured data security with a secure database for user information and transaction logs.

SELECTED PROJECTS

- **Adaptive Lung Cancer Detection System** | *EfficientNetB0, ResNet50, InceptionV3, Transfer Learning*
  - CNN-Based Approach Using CNN and Transfer Learning for Enhanced Lung Cancer Diagnostics.
  - Applied transfer learning with pre-trained models achieving high accuracy on histopathological images.

- **TensorFlow-Based Image Classifier** | *TensorFlow, Image Classification, Neural Network*
  - Built a neural network model using TensorFlow to classify images in the Fashion MNIST dataset.
  - Preprocessed data for training created and compiled a sequential model with dense layers.
  - Visualized predictions with helper functions highlight correct and incorrect classifications.

- **DNA Sequence Classification** | *Sequence Encoding, Machine Learning, Computational Biology*
  - Classified DNA sequences, represented as strings of nucleotides (A, T, C, G), using machine learning algorithms.
  - Preprocessed DNA data by encoding sequences and identified SVM (linear kernel) with an F1 score of 0.96.

- **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
  International Conference on Innovative Computing and Communication'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, SQL, HTML, CSS.
- **Frameworks**: Pandas, NumPy, Matplotlib, Scikit-learn, TensorFlow, PyTorch.
- **Tools**: IBM Cognos Analytics, LaTeX, Microsoft Office Suite, Power BI.
- **Additional Tools & Technologies**: Draw.io, Canva, Anaconda (Python), Bio Render.

ACCOMPLISHMENTS & LEADERSHIP EXPERIENCE

- **Public Relations (PR) Head** in the Training and Placement Cell, IGDTUW *(2023-2025)*

- **Ranked in the top 10%** of students in the "The Psychology of Language" Exam, demonstrating a deep understanding of key concepts and a high level of academic excellence (NPTEL) *(2024)*

- **Ranked 3rd** in undergraduate degree college, showcasing academic excellence. *(2023)*

- **Volunteered at CSIR-IGIB** during Jigyasa- Open Day'24, interacting with high school students. *(Oct 2024)*

- **Finalist in Smart India Hackathon 2022**, demonstrating innovation and problem-solving skills in a national competition.

- **N.C.C. (National Cadet Corps)** – Secured 'A' Grade in both 'B' and 'C' Certifications *(2017-2021)*

- **Cricket Team Captain**, Awarded second place in a competitive cricket tournament *(2018)*

- **Volunteered with the Art of Living Foundation**, assisting in organizing wellness and meditation workshops *(2018)*

CERTIFICATIONS

- **Python & TensorFlow: Deep Dive into Machine Learning**, Udemy *(2024)*
- **The Psychology of Language**, IIT Guwahati (NPTEL) *(2024)*
- **The Science of Happiness and Wellbeing**, IIT Kharagpur (NPTEL) *(2023)*
- **Ethical Hacking**, Simplilearn *(2023)*
- **Blockchain Essentials**, IBM *(2021)*

EXTRA CURRICULAR ACTIVITIES

- **Tutored high school students** in Computer Science and Python Programming.
- **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. Jitendra Narayan, Senior Scientist, CSIR-IGIB
  Email: jnarayan@igib.in

- Dr. D.K. Tayal, Professor, IGDTUW
  Email: devendratayal@igdtuw.ac.in