

# SAYAM SINGLA

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## EDUCATION

- Indian Institute of Technology Delhi** Delhi, India  
*Bachelor of Technology in Textile and Fibre Engineering; CGPA: 8.649* 2019 – Present
- OPS Vidya Mandir School Karnal** Haryana  
*CBSE (10+2) Percentage: 90.2* 2017 – 2019
- Delhi Public School Karnal** Haryana  
*CBSE (10) Percentage: 95* 2008 – 2017

## SCHOLASTIC ACHIEVEMENTS

- Merit Award:** For securing position amongst top 7% students (academically) for 2 consecutive semesters (2022)
- Summer Undergraduate Research Award:** Conferred a grant for a research project by IRD. (2021)
- Letter of Recommendation** from Prof. N M Anoop Krishnan, IITD for outstanding research contribution (2021)
- Secured **99.14** Percentile in JEE Mains & **97.44** Percentile in JEE Advanced examinations (2019)

## INTERNSHIPS

**Publicis Sapient** | *Data Science and Analytics* (May'22 - Jul'22)

- Developed a complimentary item RecSys for fashion retail to complete the look based on location & trend
- Designed a model using image background for location info. and segmentation technique for cloth feature embedding
- Used facial Detection for person info. & Deployed the model using flask API through Docker and AWS

**Torch Investement Management Pvt. Ltd.** | *Quantitative Strategist* (Mar'22 - Jun'22)

- Optimised the model for predicting next year top 30 performing stocks of US Market with 5% increase in Accuracy
- Derived stock interdependency using Graph Networks to unravel the community info. for top30 stock prediction
- Extracted tweets from Twitter API used FinBERT for sentiment analysis to understand the stocks behaviour

**University of Warwick, England (Professor Hakan)** | *Research Collaboration* (Jun'21 - Aug'21)

- Remodeled LightGCN architecture for heterogenous weighted graph data for collaborative filtering system
- Designed meta relations for info. propagation in streaming GNN for combined aspect info. for recommendations
- Analysed 10000+ interconnected HIN graph nodes through t-SNE embeddings to examine the user-item interactions

**RMIT University, Melbourne, Australia (Professor Wei Shao)** | *Research Intern* (Jan'21 - Feb'21)

- Modified the crowd density map estimator CFANet incorporated with temporal awareness and scale adaptive feature
- Devised a structure framework combined with object tracking program to eliminate background misrecognition

## PROJECTS

**Social Network Analysis of The Indian Stock Market** | *Dr. Abhijnan Chakraborty* (Jan'22 - Apr'22)

- Sourced NIFTY stocks data from NSE and Yahoo Finance for preliminary and Covid19 analysis within stock network
- Performed time series decomposition and estimated log returns to visualise covid effect on stock market
- Visualised stock graphs using different methods with Louvain community detection algorithm using Gephi

**Decoding Glass Genomics** | *Research Project | Prof. N M Anoop Krishnan* (April'21 - Feb'22)

- Designed composition-property model achieving 91% accuracy, utilizing Scikit-learn, optuna for **regression** modelling
  - Analysed composition-dependent variations of glass properties using SHAP game theory capturing underlying physics
  - Reduced dependent parameters by 64% in 300K compositions to analyze inter-dependencies with interaction values
- Received funding from IRD, IITD as part of SURA 2021 to create an Industrial research solution*

**Yoga Pose Estimator** | *Prof. Rahul Garg* (Oct'21 - Nov'21)

- Designed a Deep CNN model using transfer learning in PyTorch exploiting the features of images from different angles to identify the yoga pose in the unknown angled images.
- Transformed dataset images containing the 19 Asanas to avoid the background & better feature interpretation.

**Restaurant Simulation** | *Prof. Mausam* (Feb'21 - Mar'21)

- Developed real-time simulation environment in Java for restaurant to increase the output efficiency in minimum time
- Implemented Heaps AVLTree to calculate minimum waiting time of customer execute multiple query productively
- Fabricated the algorithm with state function which updates the customer with state of his order.

## TECHNICAL SKILLS

Python, Java, MySQL, MATLAB, TensorFlow, PyTorch, Docker, Networkx, Git, SML, Gephi, **HPC**, LaTeX, Adobe PS

## POSTION OF RESPONSIBILITY

**Maintenance Secretary** | *Board of Hostel Management, IITD* | *Elected unanimously by 650+ residents*

- Spearheaded a maintenance committee of 12 members, managing utilizing the resources for students' well-being
- Member of house working committee and Responsible for strategic management for the well being of 650+ residents

**Events and Adminstration Executive** | *Entrpreneurship and Development Cell, IITD*

- Managed 4 Day eDC's BECON'21 with 40+events/day and Functioned as the Point of Contact for 2K registrations
- Connected with 300 startups to build Relations for the club and pitched several panel members for E-Summit events