

# Ayush Yadav

Final Year Undergraduate  
B.S Physics  
Indian Institute of Technology, Kanpur

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## Academic Qualifications

Year	Degree/Certificate	Institute	CPI/%
2019 - Present	B.S	Indian Institute of Technology, Kanpur	7.2/10
2019	CBSE (XII)	S.R International School, Bareilly	93.4%
2017	CBSE (X)	S.R International School, Bareilly	10/10

## Key Projects

**Tweet Sentiment Analysis** | Self Project May'22-Jun'22

- Performed Exploratory Data Analysis, plotted and investigated after cleaning and pre-processing tweets using **NLTK** library
- Implemented **Logistic Regression**, **BNB** & **SVM** models to get an accuracy rate of **94.6%**, **93.7%** & **94.6%** respectively
- Implemented & trained neural network transformer **BERT model** on pre-processed tweet to achieve accuracy rate of **96.32%**

**Implementing Pairs Trading Strategy** | Science And Technology Council, IIT Kanpur May'21- Jul'21

- Designed a data-driven quantitative Trading Strategy using Python libraries observing 6 years data sample of Indian stocks
- Effectuated Cointegration approach: Identified pair of stocks for which Linear Combination results in Stationary Time series
- Estimated hedge ratio using Linear Regression, normalized the spread using rolling window: Took market-neutral position

**Facial Emotion Recognition** | Self Project May'21- Jul'21

- Aimed at leveraging the computer with the ability to classify seven basic emotions using the facial expressions of humans
- Performed Face Alignment, Face cropping, Data Normalization and Data Augmentation on the famous CK+ dataset
- Deployed a Convolution Neural Network (CNN) model comprising of Convolutional, Maxpooling, Flatten, Dense layers
- Achieved an overall validation accuracy of 97.49% averaged over all validation sets obtained from cross validation

**Markowitz Portfolio Management** | Self Project May'21- Jul'21

- To analyze risk and return of a sample of Indian stocks using Python libraries
- Implemented Modern Portfolio Theory to analyze risk and return of a sample of Indian stocks using Python libraries
- Plotted the Efficient Frontier | Obtained the optimal weight to arrive at a portfolio having the Maximum Sharpe Ratio
- Quantified risk & reward by calculating Sortino Ratio (1.7), Treynor's Ratio (9.2), CAGR (21%) & Beta (0.7) of portfolio

**To-do List** | Self Project May'21- Jul'21

- Developed a website to keep track of day-to-day work that is capable of storing task that need to be completed any day
- Implemented express framework in NodeJs to run the server and EJS to send data back to client and add dynamic content

**Sudoku Solver,N-Queen Visualizer and Tic-Tac-Toe** | Self project May'21- Jul'21

- Used **Pygame** module to develop a GUI which seeks user input and helps visualizing the execution of the Sudoku algorithm
- Implemented **Back-tracking Algorithm** to solve Sudoku & N-Queen and **Minimax Algorithm** to solve Tic-Tac-Toe games

## Technical Skills

**Programming:** C/C++, Python ,SQL, JavaScript  
**Libraries:** NumPy, Pandas, Scikit-learn, Matplotlib, Nltk

**Tools :** Git,L<sup>A</sup>T<sub>E</sub>X, MATLAB , Microsoft Office Suit  
**Miscellaneous:** AutoCAD, ReactJS, HTML, CSS

## Relevant Courses \*online

Data Structures & Algorithms*	Macroeconomics	Fundamentals of Computing
Mathematical Methods	High Performance Computing	Probability and Statistics
Quantum Computing	Linear Algebra and Differential Equation	Introduction to Electronics

## Position Of Responsibility

**Organizer Events, Udghosh, IIT Kanpur** (May'21- May'22)

- Co-Organized three-day long **National Level** Sports festival with more than 1500 participants from various colleges
- Conducted National Open School Sports Quiz(NOSSQ) with participant from 3000+ schools and 15000+ students
- Coordinated team of Senior Executives to conduct the **Cricket tournament** with more than 100+ participants

**Senior Executive, Marketing, Techkriti'21**

- Conducted and managed to attract 100+ teams, comprising of 200+ participants in 2 competitions with worth of Rs 25000 prize
- Organised Take-off event in tech competitions with team of Senior Executives and Managers with more than 200 participants

## Extra Curricular Activity

- Fabricated a trainer and twin boom pusher RC aircraft under Aeromodelling club
- Core Team Member, Enactus: Involved in Ideation (Social Entrepreneurship) for nearby places of IIT Kanpur campus
- Volunteered to teach 2 Students for preparation of JEE Mains and JEE Advanced during the summer of 2020
- Achieved 1st position for rubber powered Ornithopter and 3rd Postion in F1D plane in **Takneek 19'**