

# Piyush Senwar

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## Academic Qualifications

Year	Degree/Certificate	Institute	CPI / %
2018 - 2022 (exp.)	B.Tech	Indian Institute of Technology, Kanpur	8.42/10.00
2018	CBSE - XII	Delhi Public School, Jodhpur	97.4 %
2016	CBSE - X	Delhi Public School, Jodhpur	10.0/10.0

## Technical Skills

- **Programming Languages:** C++, C, Python, Python,R, Octave, MATLAB HTML(basic),  $\text{\LaTeX}$  (basic), SQL(basic)
- **Softwares, Tools and Libraries:** Git, Pandas, NumPy, Scikit-Learn, Keras, Matplotlib, Seaborn, Autodesk Inventor, MS-Excel

## Key Academic Projects

- **Credit Card Fraud Detection** Nov'19 - Nov'19  
*Self Project* Github
  - An **Anomaly Detection Analysis** on the credit card transactions dataset to identify the fraudulent transactions prevailing.
  - Implemented the standard **Multivariate Gaussian Anomaly Detection** approach and then compared its performance with much more advanced anomaly detection techniques like **Isolation Forest** and **Local Outlier Factor**.
  - Applied Machine Learning and Deep Learning algorithms like **Logistic Regression**, **SVM** and **Artificial Neural Network** achieving a classification accuracy of detecting a fraudulent transaction with upto **81%**
  - Compared different models based on their **F1 score**, plotting the **Confusion matrix** and their **ROC Curves**
- **Fake News Classification** Dec'19 - Dec'19  
*Self Project* Github
  - Compared the performances of different **RNN, ANN, and ML** models to predict the fake news by at first creating an **embedding matrix** for the text data and then initially used models like **ANN** and **Logistic regression** for the classification.
  - Used algorithms like **SimpleRNN, LSTM, Bidirectional LSTM and GRU** to increase the accuracy and make better predictions.
  - Achieved a best of **98.56%** accuracy for the **Bidirectional LSTM model** followed by **LSTM > GRU > SimpleRNN > ANN > LR**.
- **Titanic: Machine Learning from Disaster** July'20 - July'20  
*Kaggle Self Project* Github
  - Prediction Analysis task to determine the chance of survival of people in the Titanic tragedy using the Titanic dataset.
  - Used various feature selection techniques like **Correlation, Anova Test, Boruta, RFE, etc.** to select the best features.
  - Compared the accuracy of prediction using both supervised like **Logistic Regression, Random Forest, ANN, etc** and unsupervised models like **K-means Clustering** and achieved an accuracy upto **85%**
- **3-Legged Jumping Robot** June'19 - July'19  
*Robotics Summer Project* Robotics Club, IIT Kanpur
  - Built a robust 3-legged robot capable of hopping and jumping in any direction coordinating with a team of 6 members
  - Used **Autodesk Inventor** to design the basic framework, tried **Matlab** and **MSC Adams** for simulation and **Arduino** to program

## Relevant Coursework

(A\* - Excellent Performance, A - Very Good Performance)

- **Algorithms and Mathematics**
  - Fundamentals of Computing
  - Data Structures\*
  - Algorithmic Toolbox\*
  - Introduction to Economics-A
  - Applied Probability and Statistics - A\*
  - Linear Algebra and ODE
  - Partial Differential Equations
- **Data Science and Machine Learning**
  - Neural Networks and Deep Learning\*
  - Machine Learning with Python\*
  - Data Analysis with Python\*
  - Introduction to Data Science in Python\*
  - Introduction to Deep learning and neural networks with Keras\* (\* Coursera)

## Positions Of Responsibility

- **Sports**

<b>Captain, Institute Hockey Team</b> (2020 - Present)	<ul style="list-style-type: none"><li>• Entrusted to be in charge for the post of Institute Hockey Team at the end of my <b>2nd year</b> itself for exhibiting excellent <b>performances</b> and <b>leadership</b> skills</li><li>• Responsible for enhancement of hockey culture in the institute by attracting and nurturing the <b>juniors</b></li><li>• Responsible to lead the team for inter/intra college tournaments including <b>Inter IIT Sports meet</b>.</li></ul>
<b>Secretary, Institute Hockey Team</b> (2019 - 2020)	<ul style="list-style-type: none"><li>• Coordinated with <b>Games and Sports Council, IIT Kanpur</b> for smooth conduction of hockey games held throughout the year including the organisation of workshops for attracting fresh talents</li><li>• Represented the institute in <b>Inter IIT Sports Meet, 2019</b> held in IIT Kharagpur during the tenure</li></ul>

- **Management**

<b>Student Guide, Counselling Service</b>	<ul style="list-style-type: none"><li>• <b>Mentored 6 freshmen</b> students to acclimatize to campus environment and to ease up their transition</li><li>• Coordinated with the <b>Counselling Service</b> in smooth organisation of the <b>Orientation Programme 2019</b> for an incoming batch of <b>900+</b> freshers.</li></ul>
<b>Senior Executive Events, Udghosh'19</b>	<ul style="list-style-type: none"><li>• Ensured smooth conduct of the sporting events comprising of more than <b>2000+</b> participants during the tournament by coordinating with the <b>heads</b>, the <b>managers</b> and guiding the <b>junior executives</b></li></ul>

## Scholastic Achievements

- Secured an All India Rank of 7198 among the **1.2 million** candidates in Joint Entrance Examination Mains 2018
- Secured an All India Rank of 7317 among the **200k** candidates in Joint Entrance Examination Advanced 2018
- Secured an Olympiad rank of **523** in International Informatics Olympiad, SilverZone Foundation 2014

## Extra-Curricular Activities

- Part of **Silver** winning Institute Hockey team in **Udghosh'19**, the annual sports festival of IIT Kanpur
- Represented Institute in **Spardha'19**, the annual Sports festival of IIT BHU and **Inferno'19**, the inter pool college sports tournament
- Selected in **top 10** amongst **60+** students to be a part of **Squash** family in the first year for Compulsory Physical Activity