# Himanshu Singh

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## EDUCATION

- **Indraprastha Institute of Information Technology**  
  *Doctor of Philosophy (Ph.D.), Computer Science, CGPA: 8.24*  
  Delhi, India  
  *Aug. 2020 – Present*

- **Amity School of Engineering and Technology, GGSIP University**  
  *Bachelor of Technology in Computer Science and Engineering; CPI: 70.51*  
  Delhi, India  
  *Aug. 2013 – Jul. 2017*

- **Shanti Gyan Niketan Sr. Sec. School, CBSE**  
  *12th; 84.2%*  
  Delhi, India  
  *Mar. 2013*

- **Shanti Gyan Niketan Sr. Sec. School, CBSE**  
  *10th; CGPA: 10*  
  Delhi, India  
  *Mar. 2011*

## EXPERIENCE

- **Indraprastha Institute of Information Technology**  
  *Teaching Assistant*  
  Delhi, India  
  *Aug. 2020 – Present*
  - Advances in Deep Learning (CSE677/ECE677)
  - Statistical Machine Learning (CSE542/342)
  - Digital Image Processing (CSE540/340)
  - Computer Vision (CSE544)
  - Natural Language Processing (CSE556)

- **Medway Technologies Pvt. Ltd.**  
  *Consultant*  
  Bangalore, KA, India  
  *Dec. 2021 – Dec. 2022*

- **Animaker Inc.**  
  *Research Scientist (Machine Learning and Computer Vision)*  
  Bangalore, KA, India  
  *Jul. 2017 – Aug. 2020*
  - Contributed in building patented text to video platform Steve AI
  - Background subtraction from images and videos.
  - Identifying and ranking relevant sections of long videos based on activity, faces, attention and saliency.
  - Developed a recommendation system of layouts, for the placement of characters and text.
  - Color recommendations for various components in a scene, using hue templates preferred by users from large datasets and creating quantitative models to score the quality of a set of colors.
  - Color palette suggestions based on existing components in the scene and background image or video.

## PUBLICATIONS

- **Himanshu Singh**, A V Subramanyam. Language Guided Adversarial Purification. In *2024 IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP 2024)*, Seoul, Korea, 14-19 April 2024.(Accepted)

## PROJECTS

- **Image Segmentation**  
  *Amity School of Engineering and Technology*  
  Aug. 2016 – May 2017
  - Performed image segmentation on Brain MRI scans to detect tumors by the use of machine learning methods. I started with implementing K-means and FCM, improved their accuracy using kernel methods. In the later part, I implemented Firefly Algorithm for optimization and getting consistent results.

- **Migration of Tinxsys from Pramati to JBoss**  
  *Goods and Services Tax Network (Intern)*  
  Jun. 2016 – Jul. 2016

- - Currently Tinxsys handles the whole indirect tax infrastructure. It is deployed on Pramati Server with an Oracle database and is managed by Wipro. The task was to identify necessary changes to the Tinxsys system so that it can be migrated to WildFly server and give a proof of concept.

- **Online Attendance Management System** May 2015 – Jul. 2015
  *Amity School of Engineering and Technology (In-house Summer Training)*
  - - System developed for maintaining the attendance of the student on a daily basis in the college. The system also provides functionality for uploading of notes and sending email/notification to individual students or to a whole branch. This system implements accountability and ensures transparency.

## Technical Skills

- **Languages**: Python, C++, SQL

- **Databases**: MongoDB, MySQL

- **Libraries and Software Packages**: PyTorch, OpenCV, Numpy, Pandas, Scikit-learn, Matlab

## Certifications and Trainings

- Deep Learning Specialization by Deeplearning.ai on Coursera

  - - Neural Networks and Deep Learning
  - - Improving Deep Neural Networks: Hyperparameter tuning, Regularization and Optimization
  - - Structuring Machine Learning Projects
  - - Convolutional Neural Networks
  - - Sequence Models

- Machine Learning by Stanford University on Coursera
- Machine Learning Foundations: A Case Study Approach by University of Washington on Coursera
- Machine Learning: Regression by University of Washington on Coursera
- The Data Scientist's Toolbox by Johns Hopkins University on Coursera
- R Programming by Johns Hopkins University on Coursera
- Completed Java test organized by IIT Bombay
- Completed Linux training test organized by IIT Bombay

## Awards and Achievements

- Best Performance - Research award for outstanding performance at Animaker Inc
- Bagged 1st Position at "Syntaxomania" a coding event organized by the IEEE group at Amitech 2015
- First position in street play at Conversance'14 (Cultural fest AIACTR, Delhi)
- First position in street play at Alekhya'14 (Cultural fest Trinity Institute of Professional Studies)
- School Level Topper, 65 State Rank, 556 Olympiad rank in International Olympiad of Science 2010
- Gold medalist in inter-district Taekwondo Championship, Mathura