

Education

Indian Institute of Technology Ropar Bachelor degree in Mechanical Engineering (CGPA – 8.26/10)	RUPNAGAR, INDIA 2013 – 2017
Sunbeam School Matriculation (Percentage – 91.4%)	VARANASI, INDIA 2012 – 2013
Sunbeam School High School (CGPA – 10.0/10)	VARANASI, INDIA 2010 – 2011

Projects

- Deep RL to play Flappy Bird using A3C algorithm** MAY 2017
Modelled and trained a CNN model that used Asynchronous advantage actor-critic algorithm (A3C), recently proposed by Google DeepMind, to play Flappy Bird in Keras. The model combined both policy and value based approaches to learn to play on a Flappy Bird API. ([Project GitHub Link](#))
- Text Prediction & Word Generation using RNNs and LSTM** JUNE 2017
Used a Recurrent Neural Network model, using LSTM neurons to learn English language by training it on an English novel. Further, used the learned model to forefront NLP applications such as generating further text given an initial context and predicting the next word in a sentence. ([Project GitHub Link](#))
- Titanic: Machine Learning from Disaster** MAR 2017
Developed a ML project for predicting survival of people on Titanic Ship, using data of Passenger's personal and travel credentials, using a voting classifier of MLP, SVM and Random Forests, as a part of a Kaggle competition and secured top 6% performance. ([Project GitHub Link](#))
- Cancer prediction algorithm by investigating cell characteristics (Dr. C.K. Narayanan)** OCT 2016
Developed a Support Vector Machine model to predict the nature of breast cancer, by investigating cancer cell characteristics such as cell shape, size, clump thickness etc. and compared it's effectiveness in comparison to a Multi-Layer Perceptron on the same training set.
- Caravan Insurance Policy prediction algorithm (Dr. C.K. Narayanan)** AUG 2016
Developed a platform to predict likelihood of a customer to take the Caravan insurance policy, using the ID3 Algorithm of Decision Trees and tested performance improvement using Pruning and Feature bagging.
- Huffman Encoding of Databases (Dr. C.K. Narayanan)** Nov 2015
Developed an encoding-decoding scheme to encrypt pieces of text, based on their frequency in the document; so as to facilitate their risk free transmission over a network.
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Relevant Courses

- Data Structures
- Database Systems
- Probability & Stochastic Process
- Machine Learning
- Engineering Optimization

Online Courses Completed

- Convolutional Neural Networks for Visual Recognition by Andrej Karpathy, Stanford University
 - Learn deep learning, from novice to advanced - Commonlounge Deep Learning Community
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Computer Skills

- Languages : C++ (Advanced), Python (Intermediate), Java (Beginner), C (Beginner), \LaTeX (Beginner)
 - Softwares : MATLAB
 - Databases : MySQL (Beginner)
 - Platforms: Windows, Linux
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Scholastic Achievements

- Currently holds a Hackerrank rating of 2035 (percentile 96.62) with 4 silver and 4 bronze medals. (As on 20th June 2017)
 - Secured an All India Rank of 14 in Joint Entrance Screening Test (JEST 2017) in Theoretical Computer Science.
 - Secured highest grade in 5th semester, in the department (SGPA- 8.93)
 - All India Topper in ASSET test in Mathematics (2010) and abacus training provided by ALOHA, India (2006)
 - Gave Oral Presentation on "Performance Enhancement in Automotive Radiators with Different Configurations" at *International Conference on Innovative Research in Mechanical Engineering, Automotive and Aerospace Technology* at Jawaharlal Nehru University, New Delhi on 24th January 2016.
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Extracurricular Activities

- Won first prize in Dekode event of Techno-Cultural Fest of IIT Ropar, Zeitgeist for three consecutive times.
 - Represented IIT Ropar for Messier Marathon at 3rd Inter IIT Tech Meet.
 - Founded Hostel Library at IIT Ropar which rents books to poor students at the campus.
 - Club Co-ordinator, Astronomy Club of IIT Ropar for 2015 and 2016.
 - Organised ExoMars, an event aimed at establishing human settlement on Mars in Technical Fest of IIT Ropar Advitiya.
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Other Initiatives

- I recently started sharing my project works in Machine Learning on my blog (<https://shalabhsingh.github.io/>) and I also write about technical and general topics on quora.
- Out of my interest in pure mathematics, I worked on solutions of famous Fermat's Last Theorem for 8 months in 2015. I developed some new insights as well.