Shalabh Singh

shalabh.singh@iitrpr.ac.in

Mechanical Engineering • Indian Institute of Technology, Ropar • +91-8558956032

Education

Indian Institute of Technology Ropar — Rupnagar, India
Bachelor degree in Mechanical Engineering (CGPA – 8.24/10) — *2013 – Present*

Sunbeam School — Varanasi, India
Matriculation (Percentage – 91.4%) — *2012 – 2013*

Sunbeam School — Varanasi, India
High School (CGPA – 10.0/10) — *2010 – 2011*

Projects

Titanic: Machine Learning from Disaster (Kaggle Link) — Mar 2017
Developed a Machine Learning project for predicting survival of people on Titanic Ship, using information of Passenger's sex, age, travel class, travel fare and relatives on board using a voting classifier of Multi-layer perceptron, Support vector machine and Decision tree. The project was a part of a Kaggle competition and was in top 7% of all entries. (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 an Artificial Neural Network learner on the same training set.

Caravan Insurance Policy prediction algorithm (Dr. C.K. Narayanan) — Aug 2016
Developed a platform to predict whether a customer will take the Caravan insurance policy or not, using the ID3 Algorithm of Decision Trees and improved the efficiency of the algorithm 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.

Relevant Courses

- Data Structures
- Introduction to MATLAB
- Fuzzy Logic
- Machine Learning
- Engineering Optimization
- Operations Research
- Introduction to Computing
- Probability & Stochastic Process
- Rocket Propulsion

Online Courses

- Python for Data Science
- Kaggle Python tutorial on Machine Learning
- Python Data Science Toolbox
- Statistical Thinking in Python

Computer Skills

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

Scholastic Achievements

- Currently holds a Hackerrank rating of 2171.42 (percentile of 98.45) with 4 silver and 3 bronze medals. (As on 29th March 2017) (Hackerrank Profile Link)
- 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 with a perfect score. (2010)
- All India Topper with a perfect score in abacus training provided by ALOHA, India
- All India Rank 91 in National Cyber Olympiad conducted by SOF.
- 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.

Independent Projects & Course Project

Droplet Evaporation Intensification for Hot plate Cooling (B.Tech. Thesis Project) Aug 2016 - Present
Experimental work has been conducted on analysing the evaporation characteristics of spray drops impinged on hot surfaces using image processing in MATLAB. The project aims at increasing the evaporation rate, by mixing nanoparticles in water droplets.

Simpler proof of Fermat's Last Theorem June 2015 - Feb 2016
Independently calculated the possible format of solutions of the **Fermat's Last Equation** and analyzed the results considering the fact that the equation actually has no solutions. New useful properties were developed during the work, which are under the process of submission for scrutiny.

Numerical Heat Transfer Study of Laminar Air-Water Mist Flows on Flat Plate May 2016 - July 2016
A numerical setup was developed to predict heat transfer augmentation in laminar mist flows on flat surfaces using Discrete Phase Model and the results were compared with single phase flows on similar flat surfaces.

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.