

# Gursimran Singh

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## EDUCATION

### UNI OF BRITISH COLUMBIA

#### MSC IN COMPUTER SCIENCE

Expected May 2019 | Vancouver, CA  
Cum. 89.66% (till now)

### THAPAR UNIVERSITY

#### BE IN COMPUTER SCIENCE

June 2013 | Patiala, India  
Cum. GPA: 7.2 / 10

## COURSEWORK

Machine Learning and Data Mining  
Social and Information Networks  
Information Visualization  
Machine Learning (ongoing)  
Multimodal Learning (ongoing)  
Graphical Models (ongoing)  
Course Projects - [1, 2, 3]

## AWARDS

### KVPY Fellowship (mentored)

Among 40 selected across India [1]

### Accenture Innovation Jockey

Placed 1st/ 1000+ (cash award) [1,2]

### Freescale Cup (aka NXP Cup)

Placed 5th/130 (cash award) [1, 2, 3]

### Texas Analog Design Contest

Among top 25/180 (cash award) [1]

### Freescale Smart Car Race

Among top 10/100 (cash award) [1]

### IISER Summer Fellowship

Among 50 selected across India

## HORIZONTAL

**ML-India** Links - [1, 2 3, 4, 5, 6]

**CCS society** Links - [1, 2, 3, 4]

**Ubuntu community** Links - [1, 2]

## SKILLS

### Frameworks:

Pandas • Sk-learn • PyTorch • D3

### Programming:

Python • Matlab • Julia • C++

### Tools:

Git • MySQL •  $\LaTeX$

## EXPERIENCE

### UBC | TEACHING ASSISTANT

September 2017 – Present | Vancouver, CA

- TA for Master of Data Science (MDS)
- Courses TA'ed - Unsupervised Learning, Information Visualization, Data Science Workflows, Data Management for Business Analytics

### ASPIRING MINDS RESEARCH | SENIOR RESEARCH ENGINEER

July 2013 – May 2017 | Gurgaon, India

- Devised and implemented a **scalable semi-supervised** framework to grade functional correctness of a programming code. The new approach expedited the question-development process by **5X** and led to a **KDD publication**.
- Implemented and designed a **machine learning pipeline** to grade stylistics and runtime complexity of a programming code. Both these project are being used by **Amazon-US** to hire for SDE1 and SDE2 roles.
- Worked on an interactive visualization to depict the **demand of a skill** using job postings data from Indeed and job-skill mapping data from ONET [Link]
- Worked in collaboration with Hong Kong University to train an **automatic speech recognition** system for Indian English.
- Implemented a **game-based assessment** framework to test inventory management skills of a candidate.

### INDIAN INSTITUTE OF SCIENCE | INTERN

Feb 2012 – May 2012 | Bangalore, India

- Worked on **matrix completion** to investigate the incoherence property requirement to recover a sparse matrix.
- Implemented the SVT algorithm to test the recovery of matrices, generated artificially, with certain patterns in them.
- Designed customised sampling techniques and empirically estimated lower bounds for different patterns.

### INDIAN INSTITUTE OF TECHNOLOGY | KVPY INTERN

June 2011 – July 2011 | Bombay, India

- Implemented **interactive simulations** of mathematical models in static, dynamic, stochastic and chaotic systems.
- Designed a model, using Adaptive Simpson's method, to estimate and validate the magneto-caloric effect of an element

## PUBLICATIONS AND PATENTS

1. **G.Singh**, S.Srikant, V.Aggarwal: Question Independent Grading using Machine Learning: The Case of Computer Program Grading, **ACM SIGKDD 2016**.
2. G.Singh, A.Ranjan, D.Singla, MD.Singh: Smart Library Management System (using RFID technology) Patent application No. 1695/DEL/2012 | Journal No. 40/ 2013.