

# Siddharth Mittal

THIRD YEAR UNDERGRADUATE · COMPUTER SCIENCE AND ENGINEERING

Indian Institute of Technology (IIT), Kanpur

☎ (+91) 7620910325 | ✉ [sidm@iitk.ac.in](mailto:sidm@iitk.ac.in) | 🏠 [smittal6.github.io](https://smittal6.github.io) | 📱 [smittal6](#)

## Education

### Indian Institute of Technology Kanpur

BACHELOR OF TECHNOLOGY, COMPUTER SCIENCE AND ENGINEERING

- Cumulative Grade Point Average: **9.4/10.0**

Kanpur, India

2015-2019 (Expected)

## Honors & Awards

- 2017 **Academic Excellence Award**, For exceptional academic performance for year 2015-16
- 2015 **All India Rank 1510**, Joint Entrance Examination Mains, 1.5 million candidates
- 2015 **All India Rank 1988**, Joint Entrance Examination Advanced, 150,000 candidates
- 2015 **All India Rank 857**, Kishore Vaigyanik Protsahan Yojana
- 2015 **Selected for INSPIRE**, Department of Science and Technology

IIT Kanpur

India

India

India

India

## Experience

### Indian Institute of Science

LEAP LAB, PROF. SRIRAM GANAPATHY [github.com/smittal6/leap-scd/](https://github.com/smittal6/leap-scd/)

Bengaluru, India

May-July 2017

- The goal was to develop a speaker independent, real time speaker change detection system
- Synthetic data set was created from TIMIT corpus
- Different models were proposed which used combinations of features and classifiers
- Experiments were carried out and reasonable accuracy was achieved on test set

## Projects

### Handwriting Prediction and Synthesis

Pune

[github.com/smittal6/handwriting-synth](https://github.com/smittal6/handwriting-synth)

Dec 17

- Implemented handwriting synthesis paper by Alex Graves using PyTorch
- Recurrent neural net was used to model the parameters of Gaussian mixture distribution
- For conditioned generation, implemented soft window by convolution with mixture of Gaussians
- This project is a work in progress

### Neural Image Captioning

IIT Kanpur

COURSE PROJECT, MACHINE LEARNING, PROF. PURUSHOTTAM KAR

Aug 17 - Nov 17

[github.com/smittal6/keras-captioning](https://github.com/smittal6/keras-captioning)

- Implemented model for captioning the images based on Show and Tell paper
- We experimented with using GLOVE embeddings, and learning our own embedding for words
- Trained model on COCO and Flickr8k Datasets, experimented with different architectures

### Investigations in anomaly detection

IIT Kanpur

UNDERGRADUATE PROJECT, PROF. MEDHA ATRE

Aug 17 - Nov 17

- Aim was to detect anomaly based on feed from several surveillance cameras
- Obtained set of tags for a time frame using TensorFlow Object Detection API.
- Pools of tags are represented as vectors using GLOVE embeddings
- Score is calculated based on embeddings to detect anomaly

### NachOS

IIT Kanpur

COURSE PROJECT, OPERATING SYSTEMS, PROF. MAINAK CHAUDHARY

Aug 17 - Nov 17

- Implemented syscalls for Fork, Exit, Exec, Sleep
- Implemented standard Unix process scheduling algorithms - FIFO, Round Robin, Shortest Job First and UNIX scheduling to assess their relative performances
- Implemented page replacement algorithms like Random Page Allocation, FIFO, LRU and LRU Clock

## Extracurricular Activity

### Counselling Service

IIT Kanpur

STUDENT GUIDE

July 16 - Apr 17

- Personally helped 5 freshers adjust to the rigours of college life
- Assisted in conducting Orientation for more than 800 incoming students

## Programming Club

SECRETARY

IIT Kanpur

Apr 16 - Apr 17

- Assisted in organizing Freshers' Programming Contest in August '16
- Responsible for dissemination of information regarding summer projects offered by Programming Club

## Skills

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**Programming** C/C++, Java, Python, Keras, PyTorch

**Web** HTML, CSS (Bootstrap)

**Utilities** Git, Vim, Shell Scripting, R, Matlab/Octave,  $\LaTeX$

## Relevant Courses

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Probability and Statistics (A\*)

Data Structures and Algorithms

Machine Learning

Natural Language Processing\*

Computational Cognitive Science\*

Discrete Mathematics

Theory of Computation

Computer Organization

Intro to Databases\*

Game Theory\*

Linear Algebra

Psychology

Operating Systems

Compilers\*

*\*: Course in progress, A\*: For outstanding performance*