

# Aniket Sanghi

THIRD YEAR UNDERGRADUATE · COMPUTER SCIENCE AND ENGINEERING

Indian Institute of Technology Kanpur

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## Education

Year	Degree	Institution	CGPA/%
July'17 – Present	B.Tech, CSE	Indian Institute of Technology, Kanpur	9.5/10.0
2017	AISSCE – XII	Holy Cross S.S School (KAPA), Raipur	91.6%
2015	CBSE – X	Holy Cross S.S School (KAPA), Raipur	10.0/10.0

## Scholastic Achievements

2017	<b>All India Rank 188</b> , in Joint Entrance Examination (JEE) Advanced among 150,000 candidates	India
2017	<b>All India Rank 291</b> , in Joint Entrance Examination (JEE) Mains among 11,00,000 candidates	India
2017	<b>National top 1%</b> , National Standard Examination in Physics (NSEP) & Chemistry (NSEC)	IAPT
2017	<b>State top 1%</b> , in National Standard Examination in Astronomy (NSEA)	IAPT
2016	<b>All India Rank 138</b> , in Kishore Vaigyanik Protsahan Yojana (KVPY) among 50,000 candidates	IISC, Bangalore
2015	<b>NTSE Scholarship Awardee</b> , selected in top 750 students out of 8,00,000 candidates	India

## Programming Achievements

2019	<b>Team Rank 88</b> , in ACM-ICPC'19 Amritapuri Regionals in 350 teams selected from 4500 teams	CodeChef
2019	<b>Completed all 5 levels</b> , of Google foo-bar challenge	Google
2019	<b>All India Team Rank 31</b> , in Google Hash Code 2019	Google
2019	<b>Country Rank 63</b> , in Round 2 of Google Code Jam 2019	Google
2019	<b>AIR 208, Rated 6-star</b> , among 1+ lakh coders with a rating of 2247 on CodeChef	CodeChef
2018	<b>Team Rank 179</b> , in ACM-ICPC'18 Amritapuri Regionals in 250 teams selected from 3000 teams	CodeChef

## Experience

### Full Stack Developer Intern

Kanpur, India

SUMMER OF CODE, PROF. SANDEEP SHUKLA (WITH SUPPORT FROM NUTANIX AND UPSIDC)

Summer - 2018

- Implemented Saviour, an android application to detect accident with the help of gyroscopic, acceleration sensors in the android and Raspberry Pi (IoT) for detecting air-bag inflation in the vehicle for confirmation
- Notified the near-by hospitals (tracked via Google-Maps) and kins via a notification message/mail
- Realised a Desktop Application in JAVA to handle Derby database through user-friendly GUI
- Conceptualised Software Architecture, WebDev (PHP, JavaScript) and Database Management (SQL and Derby)

## Projects

### Personal Diary

IIT Kanpur

COURSE PROJECT, PROF. NISHEETH SHRIVASTAV

Jul. 2019 - Nov. 2019

- Built a MERN Application to write personal notes along with pictures to collect your memories
- Used Express.js, MongoDB with Node.js on server-side and React-native on client side
- Used mobile-native functionalities including camera, gallery, storage to click and upload pictures
- Code can be found at <https://github.com/AniketSanghi/Personal-Diary>

### Building gemOS

IIT Kanpur

COURSE PROJECT, PROF. DEBADATTA MISHRA

Jul. 2019 - Nov. 2019

- Implemented file system syscalls including open(), write(), read(), pipe(), fork() etc
- Implemented multi-level paging management for syscalls like mmap(), munmap(), mprotect()
- Implemented cfork() and vfork() by properly managing the shared memory regions and policies

## Machine Learning

COURSE PROJECT, PROF. PURUSHOTTAM KAR

IIT Kanpur

Jul. 2019 - Nov. 2019

- Experimented with various classification algos including SGD, Coordinate Descent, Coordinate Maximisations
- Improved accuracy of FastreXML on a given sample dataset without affecting the time and space complexity
- Implemented a CNN with linear layers to solve a given image classification problem using pytorch

## Filesystem in Userspace

ACA PROJECT, PALLAV AGRAWAL

IIT Kanpur

Jan. 2018 - Apr. 2018

- Implemented a FUSE filesystem in Golang with basic read/write/edit functionality using bazil's fuse library
- Actualized an IITK Student Search purely in bash by scraping data from office automation via curl
- Code can be found at <https://github.com/AniketSanghi/CFT>

## Digital Monopoly Board Game

COURSE PROJECT, PROF. INDRANIL SAHA

IIT Kanpur

Jul. 2017 - Nov. 2017

- Materialised a multiplayer Digital Monopoly board game for personal computer in Python 3.6
- Realised the GUI using pygame, tkinter libraries and back-end using object oriented programming
- Code can be found at <https://github.com/AniketSanghi/Monopoly-game>

## Mini Projects

### polySAT

[HTTPS://GITHUB.COM/ANIKETSANGHI/POLYSAT](https://github.com/AniketSanghi/POLYSAT)

IIT Kanpur

Oct 2018

- Implemented a SAT solver for propositional logic using the DPLL Algorithm in C++
- Experimented with various optimisations including 2-literal watch method and MOMS Algorithm

### Cipher Decoder

[HTTPS://GITHUB.COM/ANIKETSANGHI/CIPHER\\_DECODER](https://github.com/AniketSanghi/CIPHER_DECODER)

IIT Kanpur

Mar 2019

- Actualized a decoder to decode substitutional cipher including Gold-Berg cipher in Haskell

## Technical Strengths

**Programming** C/C++ (Proficient), Python(Proficient), Haskell, Golang, Node.js

**Web** Express.js, Node.js, React-native, React, MongoDB, MySQL, PHP, Javascript

**Utilities** Linux shell utilities, Git, Docker, OSX, Arduino,  $\text{\LaTeX}$ , vim, HDL (Verilog)

## Relevant Coursework

A\* Operating System

A Linear Algebra

A Computer Organisation

i Compilers

A\*: Grade for exceptional performance

A\* Comp. Lab (Bash + Haskell)

A Introduction to ML

A Data Structures & Algorithms

i Database Management

i : ongoing

A\* Logic for Computer Science

A Advanced Algorithms

A Theory of Computation

i Computer Networks

## Extracurricular Activity

**Secretary** ASSOCIATION OF COMPUTING ACTIVITIES, IIT KANPUR

Apr. 2018 - Apr. 2019

- Helped with conducting coding contests, hackathons and other events in the campus

**Mentor** ALGORITHMS INDEPTH, PROGRAMMING CLUB IITK

May. 2019 - Jul. 2019

- Taught various algorithm paradigms including Dynamic Programming, Greedy, Graph Theory, Game Theory
- Introduced various advance algorithms including KMP, Persistence, Centroid Decomposition, Huffman Coding

## Miscellaneous

- Comprehended **LL(1) parsing algorithm** using grammar and string for **compiler design**
- Materialised an **IC checker** by programming an **Arduino** in winter workshop of Electronics Club
- Constructed a **bot** to lift and relocate objects as part of a competition by Robotics Club in takneek