

# Sidhant Nagpal

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## EDUCATION

### UNIVERSITY OF DELHI

BE in Computer Engineering

2015-19 | Delhi, India

Netaji Subhas Institute of Technology

Percentage: 82.13% (Dean's Merit List)

### BAL BHARATI PUBLIC SCHOOL

Grad. 2015 | Delhi, India

AISSCE (Class XII): 96%

AISSE (Class X): Cum. GPA 10.0/10.0

## SKILLS

Algorithms • Data Structures • Math  
Deep Learning • Scientific Computing

## LANGUAGES

Python • C++ • C • Java • Julia  
SQL • Bash • LaTeX • HTML • CSS

## LIBRARIES & TOOLS

PyTorch • Keras • FluxML • NumPy  
Jupyter/Colab • Selenium • Flask  
Git • Matlab/Octave • Postman

## PROJECTS

### • Computer Vision

Image Generation using GANs (DCGAN, LSGAN), Autoencoders, Image Denoising using Residual Learning, Neural Style Transfer, Transfer Learning using CNNs

### • Natural Language Processing

Text Classification using FastText (bag of tricks) model, Sentiment Analysis using GloVe and LSTM model, Language Model using GRU

### • Reinforcement Learning

DQN (Deep Q-Network) and Double DQN for Q-learning to solve OpenAI gym problems

### • Game Playing AIs

Intelligent solvers for N-Puzzle, N-Queens, Tic-Tac-Toe, Sudoku using Heuristic Search, Minimax, Hill Climbing, Simulated Annealing

### • Formal Language & Automata

Implemented Finite, Push-Down Automata, Turing Machine for Formal Languages

### • GitHub Mini-Projects (Python)

Web App (Flask) for real-time ranking based on Elo rating and Web Scraper (Selenium) for tracking progress on Programming Judges

## LINKS

 [sidhantnagpal](#)  [sidhantnagpal](#)  
 [sidhantnagpal.com](#)  [sidhant\\_n](#)

## EXPERIENCE

### GOOGLE SUMMER OF CODE | Developer for SymPy

Feb 2018 - Sep 2018 | Remote *Mentor: Prof. Kalevi Suominen (University of Helsinki)*

- Implemented **discrete transforms, convolutions, recurrences** modules using efficient algorithms and paradigms (dynamic programming, divide and conquer) for **SymPy**, a **NumFOCUS** sponsored Python library for symbolic mathematics
- Added Fast Fourier Transform, Number Theoretic Transform, Walsh Hadamard Transform, Möbius/Zeta transforms and corresponding convolutions
- Contributed to modules for matrices, calculus, combinatorics, number theory

### INTUIT | Software Engineering Intern

May 2018 - Jul 2018 | Bangalore, India

- Incorporated encryption logic and distributed message queue to decouple the monolith - **IntuitMarket.com** (QuickBooks e-commerce) for AWS migration
- Contributed to Intuit Data Protection Services (IDPS) SDK for cryptography
- Presented the project to VP and Chief Architect of Product Development
- Hackathon runner-up for implementing IoT & AI-based solutions for **Intuit Mint** to automate expense tracking using NFC trigger and Google Assistant

### INDIAN INSTITUTE OF TECHNOLOGY | Research Intern

Jun 2017 - Jul 2017 | Kanpur, India *Supervisor: Prof. Raghunath Tewari (IIT Kanpur)*

Worked on the Dynamic DFS problem in Graph Theory and presented an efficient algorithm based on Heavy-Light Decomposition from the paper [arXiv:1502.02481v3](#)

## POSITIONS OF RESPONSIBILITY

**Org Member, SymPy (GitHub)** Active contributor and pull request reviewer

**Mentor, Google Code-in** Mentored students for Sustainable Computing Research

**Delegate, PyCon India** Organised and conducted a developer sprint for SymPy

**Volunteer, Intuit** Created tactile stories for blind children (We Care & Give Back)

**Volunteer, WARUDA NGO** Created awareness about computer literacy

## PROGRAMMING EVENTS

2018	Rank 464/24K+	Google Code Jam Round 3 (semi-final)
2017	Rank 1668/25K+	Google Code Jam Round 2 (quarter-final)
2017	Rank 105/1K+	Google Kickstart Round G
2017	Rank 60/800+	Google Kickstart Round B
2017	Rank 26/250+	ACM-ICPC Asia Regionals, Amritapur
2017	Rank 41/100+	ACM-ICPC Asia Regionals, Gwalior
2016-18	Top 300/300K+	Sphere Online Judge (SPOJ)
2015-18	Solved 1K+ problems	Programming Judges (Codeforces, SPOJ, etc)

## ACHIEVEMENTS

2015-16	Merit Scholarship	Dean's Merit List, Computer Eng. Dept.
2016	Ramanujan Award	Mathematics courses, Computer Eng. Dept.
2015	99.81%tile among 1.3M+	Joint Entrance Examination (JEE) Main
2015	Fellowship Award	Kishore Vaigyanik Protsahan Yojana (KVPY)
2008-15	Scholar Platinum Medal	Academic excellence for 8 years, High School
2014-15	Merit Scholarship	Science courses, High School
2014	Top 1.33% among 300K+	National Talent Search Examination (NTSE)
2013	Best Player & Team Captain	Inter-School Hockey Tournament
2010	Silver Medallist, IOM	International Olympiad of Mathematics
2010	Silver Medallist, IMMO	International Master Mathematics Olympiad