

# Sidhant Nagpal

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## EDUCATION

### UNIVERSITY OF DELHI

#### BE in Computer Engineering

2015-19 | Delhi, India

Netaji Subhas Institute of Technology

Percentage: 82.11% (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 • Applied Math • Deep Learning • Open Source

## 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

### • Generative Models (Bachelor Thesis)

Guiding the training of GANs (Generative Adversarial Networks) using Autoencoders and analysis of convergence, diversity plots

### • Computer Vision

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

### • 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 using Heuristic Search, Simulated Annealing

### • 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

GitHub:// [sidhantnagpal](#)

Web:// [sidhantnagpal.com](#)

## EXPERIENCE

### MIDAS LAB, IIIT DELHI & NUS | Research Intern

Apr 2019 – Present | Delhi, India

Advisor: Prof. Rajiv Ratn Shah (IIIT Delhi)

- Working on domain-specific NLP to detect trolling, profanity and hate-speech by leveraging local linguistic expressions and fine-tuned word embeddings
- Working on feature selection via Swarm Intelligence to determine optimal features for multimodal text classification using wrapper-based methods
- Multimodal Digital Media Analysis (MIDAS) Lab is a collaboration of IIIT Delhi and National University of Singapore (NUS)

### GOOGLE SUMMER OF CODE | Developer for SymPy

Feb 2018 – Sep 2018

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 matrices, calculus, statistics and number theory modules

### 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
- 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

Advisor: 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

**Mentor, Google Summer of Code** for statistics projects in SymPy Feb '19–present

**Org Member, SymPy (GitHub)** Active contributor and reviewer Sep '18–present

**Mentor, Google Code-in** for Sustainable Computing Research Lab Dec '18

**Delegate, PyCon India** Organised a developer sprint for SymPy Oct '18

**Volunteer, Intuit** Created tactile stories for visually impaired children Jun '18

## ACHIEVEMENTS

2018	Rank 464/24K+
2017	Rank 105/1K+
2017	Rank 60/800+
2017	Rank 26/250+
2017	Rank 41/100+
2016-18	Top 300/300K+
2016-17	Merit Scholarship
2016	Ramanujan Award
2015	99.81%tile among 1.3M+
2015	Fellowship Award
2014-15	Merit Scholarship
2014	Top 1.33% among 300K+
2008-15	Scholar Platinum Medal

Google Code Jam Round 3 (semi-final)  
Google Kickstart Round G  
Google Kickstart Round B  
ACM-ICPC Asia Regionals, Amritapuri  
ACM-ICPC Asia Regionals, Gwalior  
Sphere Online Judge (SPOJ)  
Dean's Merit List, Computer Eng. Dept.  
Mathematics courses, Computer Eng. Dept.  
Joint Entrance Examination (JEE) Main  
Kishore Vaigyanik Protsahan Yojana (KVPY)  
Science courses, High School  
National Talent Search Examination (NTSE)  
Academic excellence for 8 years, High School