

# 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 • Math  
Deep Learning • Open Source Software

### LANGUAGES

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

### LIBRARIES & TOOLS

PyTorch • NumPy • Pandas • spaCy  
scikit-learn • Jupyter • Selenium • Git

## 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 (evaluation using Inception score, FID); Image denoising using residual learning; Image classification & Neural style transfer using transfer learning

#### • Natural Language Processing

Text classification on public datasets by modeling different combinations of GloVe, FastText word embeddings with LSTM, CNN, CNN-GRU neural networks; Language modeling using GRU and beam search

#### • Game Playing - Search & Optimise

Intelligent solvers for N-Puzzle & N-Queens using Heuristic Search, 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

GitHub:// [sidhantnagpal](#)

LinkedIn:// [sidhantnagpal](#)

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

## EXPERIENCE

### TOWER RESEARCH | Software Development Engineer in Test

Jun 2019 – Present | Gurgaon, India

Keywords: Python, Shell scripting, Trading

- Working in core engineering department on verification of high frequency trading (HFT) activities at various exchanges using behavior driven development (BDD) and test automation framework
- Tower is one of the top ten players in HFT globally, with sizeable presence in India

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

Apr 2019 – Jul 2019 | Delhi, India

Advisor: Prof. Rajiv Ratn Shah (IIIT Delhi)

- Worked on domain-specific NLP in collaboration with Bloomberg LP (USA) to detect trolling, profanity and hate-speech by leveraging local linguistic phrases
- Worked on feature selection (wrapper-based) for multimodal text classification
- MIDAS Lab is a collaboration of IIIT Delhi and National University of Singapore

### GOOGLE SUMMER OF CODE | Open Source Developer

Feb 2018 - Sep 2018

Mentor: Prof. Kalevi Suominen (University of Helsinki)

- Implemented discrete transforms, convolutions and recurrences modules using efficient algorithms and paradigms (dynamic programming, divide & conquer) for SymPy, a computer algebra system in Python used 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

Keywords: C#, .NET framework, Python

- Incorporated encryption logic and message queue (AWS SQS) to decouple the monolithic design of IntuitMarket.com (e-commerce portal) for AWS migration
- Contributed to Intuit Data Protection Services (IDPS) SDK for cryptography
- Finished in top 2 of intern hackathon for implementing IoT & AI-based solutions for Intuit Mint to automate expense tracking using NFC 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

Org Member & Google Summer of Code Mentor for SymPy	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+	Google Code Jam Round 3 (semi-final)
2017	Rank 60/800+	Google Kickstart Round B
2017	Rank 26/250+	ACM-ICPC Asia Regionals, Amritapuri
2017	Rank 41/100+	ACM-ICPC Asia Regionals, Gwalior
2016-18	Top 300/300K+	Sphere Online Judge (SPOJ)
2016-17	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)
2014	Top 1.33% among 300K+	National Talent Search Examination (NTSE)
2008-15	Scholar Platinum Medal	Academic excellence for 8 years, High School