

# 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 • 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)

Stabilizing the training of GANs (Generative Adversarial Networks) using Autoencoders, Evaluations - Inception Score, FID, KDE 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

### 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

## RESEARCH

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

Apr 2019 - Present | Delhi, India

Advisor: Prof. Rajiv Ratn Shah (IIIT Delhi)

Working on the problem of offensive language detection in NLP with MIDAS Lab (Multimodal Digital Media Analysis), a collaboration between Indraprastha Institute of Information Technology Delhi (IIITD) & National University of Singapore (NUS)

### 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 student 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 1668/25K+
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 Code Jam Round 2 (quarter-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