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, Evaluation metrics - Inception Score & FID
- **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 NLP & CV projects in Multimodal Digital Media Analysis (MIDAS) Lab, a collaboration between IIIT Delhi & NUS (National University of Singapore)

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+	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, 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 Entance Examinantion (JEE) Main
2015	Fellowship Award	Kishore Vaigyanik Protsahan Yojana (KVPY)
2014-15	Merit Scholarship	Science courses, High School
2014	Top 1.33% among 300K+	National Talent Search Examination (NTSE)
2008-15	Scholar Platinum Medal	Academic excellence for 8 years, High School