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
Machine Learning • Deep Learning

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 (evaluations using Inception score, FID); Image denoising using residual learning; Image classification & Neural style transfer using transfer learning
- **Natural Language Processing**
Text classification using multiple techniques: GloVe & FastText embeddings paired with LSTM, CNN, CNN-GRU and Attention models; Language modeling using GRU
- **Game Playing AIs**
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

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 for security and message queue (SQS) to decouple the monolithic design of IntuitMarket.com (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 Project collaborator and contributor	*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

Year		
2018	Rank 464/24K+	Google Code Jam Round 3 (semi-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 Examiantion (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