

SIDDHARTH VERMA

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EDUCATION

Netaji Subhas Institute of Technology (NSIT), University of Delhi, India

Aug 2015 – Jun 2019

Bachelor of Engineering (Honors) in Computer Engineering

- GPA: 8.6/10 (78.19%)
- Honors: **First-class** with Distinction, **IEEE scholarship** recipient for research in evolutionary computation
- Relevant coursework: Calculus, Linear Algebra, Probability and Information theory, Theory of automata, Artificial intelligence, Operating systems, Database systems, Data Structure and algorithms, Networking systems

RESEARCH AND WORK EXPERIENCE

Expedia Group, Gurgaon, India

Software Engineer

Jul 2019 – Present

- Developing **scalable microservices** for Expedia's Loyalty platform to drive the "*pay with points*" architecture.
- Implemented RESTful web services for points invoicing in **Java** using **Spring Boot** web framework.
- Saved the organization's cost by ~\$10k/month by migrating *Microsoft SQL* database to open-source *PostgreSQL*.

Software Engineer Intern

Jun 2018 – Jul 2018

- Developed a framework to perform transactions with bank partners using **Enterprise Service Bus architecture**.
- Reduced time of on-boarding partners on Expedia's platform from **3 months to 3 days**.

University of Pennsylvania, Philadelphia, USA

Dec 2017 – Dec 2019

Research Assistant, URBS lab – Perelman School of Medicine

- "Co-evolving genetic-programming (GP) trees in a rule-based learning framework", Advisor: Dr. Ryan Urbanowicz
- Proposed a **problem-driven machine learning system** by integrating GP trees in an evolutionary rule-based LCS.
 - Created a **python library** to perform genetic programming operations in regression and classification problems.
 - Enhanced the performance of GP tree operations in terms of **execution speed and tree representation**.

Netaji Subhas Institute of Technology, New Delhi, India

Jan 2016 – May 2018

Research Assistant

"Solving training issues in Generative Adversarial Networks (GANs)"

- Leveraged the feature representations from autoencoder in GAN to **mitigate modal collapse** using Pytorch library.

"Evolving game playing strategies using an evolutionary reinforcement learning technique"

- Proposed an approach to **play Othello using XCS**, a reinforcement learning LCS framework in **Java**.

VOLUNTEER EXPERIENCE

Quoko – Positive news app

June 2020

Co-creator and Technical Head

- Created a mobile app to enhance mental health of people by providing positive content during COVID-19 pandemic.
- Impacted **20k+ people** from **20+ countries** with **1k+ app** downloads.

PUBLICATIONS

- **S. Verma et al.** (2020), "Evolving Genetic Programming Trees in a Rule-Based Learning Framework". *Genetic and Evolutionary Computation Conference Companion (GECCO '20)* Cancún, Mexico. ACM, New York, USA, pp. 1-2.
- S. Nagpal, **S. Verma**, S. Gupta and S. Aggarwal (2020), "A Guided Learning Approach for GANs". *International Joint Conference on Neural Networks, IJCNN 2020* Glasgow, UK, 2020. <https://git.io/guided-gan>. IEEE, pp. 1-8.
- S. Jain, **S. Verma**, S. Kumar and S. Aggarwal (2018), "An Evolutionary Learning Approach to Play Othello Using XCS" *IEEE Congress on Evolutionary Computation (CEC)*, Rio de Janeiro, Brazil, 2018, pp. 1-8.

EXTRA-CURRICULARS

Invited speaker: *World Congress of Computational Intelligence (WCCI), Rio De Janeiro, Brazil*

Jul 2018

- Presented research ideas on **evolutionary algorithms** and **reinforcement learning** at the conference.

Summer School: *Indian Institute of Science (IISc), Bengaluru, India*

Jul 2017

- Selected in a **cohort of 77 students** from across the country to witness key researches in artificial intelligence.

SKILLS AND INTERESTS

Computer Languages: Java, Python, Bash, SQL, C++, Julia, \LaTeX

Libraries and Tools: Spring Boot, TensorFlow, Keras, PyTorch, DEAP, NumPy, Spring, Jupyter

Technical Skills: Deep Learning, Reinforcement Learning, Evolutionary computation, Computer Vision

Online courses: Deep learning specialization - deeplearning.ai, Reinforcement learning - DeepMind, Unix Workbench

Interests: French-harp player, Currency Connoisseur (collection from 50+ countries), Swimming (8+ years of training)