

Nikita Saxena

Research Engineer, Google Deepmind

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🌐 [nikita-0209.github.io](https://github.com/nikita-0209)

🔗 [nikita-0209](#)

🎓 Google Scholar

in [nikita-saxena](#)

Education

July 2023 Aug 2018	Birla Institute of Technology and Science Pilani B.E. (Hons.) Computer Science, M. Sc. Physics Graduated with <i>Distinction</i>	Pilani, India CGPA: 9.43/10
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Experience

Present Oct 2024	Google Deepmind <i>Research Engineer</i> / Advisors: Ishita Dasgupta , Isabelle Guyon ➢ Improve multimodal understanding in Gemini via pre-training and post-training contributions.	San Francisco, USA
Oct 2024 Aug 2023	Google Research <i>Predoctoral Researcher</i> / Advisors: Alok Talekar , Evan Shelhamer ➢ Implemented a super-resolution pipeline (> 8x upsampling) that inputs a timeseries of imagery at 10 meters (m) resolution and performs segmentation at 1m resolution. ➢ Performed large-scale distributed training of geo-foundational model.	Bangalore, India
May 2023 Sept 2022	Mila-Quebec AI Institute <i>Research Fellow</i> / Advisor: Prof. Yoshua Bengio ➢ Discovered molecules and peptides with specific properties in an active learning setting using multiple cheap approximations (oracles) of the target function. ➢ Enhanced GFlowNets to sample candidates proportional to rewards given by a multi-fidelity acquisition function based on mutual information. ➢ Proposed algorithm identifies desirable candidates within <50% computational cost expended by the single expensive oracle.	Montreal, Canada
Aug 2022 May 2022	Bloomberg <i>Software Engineering Intern</i> ➢ Designed a C++ infrastructure that abstracts the database accessor pipeline and provides clients with detailed information on the corporate actions that have impacted their securities. ➢ Designed the UI and monitoring dashboard on Humio for the service.	Pune, India
Sept 2021 May 2021	Tufts University, IAIFI <i>Research Intern</i> / Advisors: Prof. Taritree Wongjirad , Prof. Shuchin Aeron ➢ Designed a generative network to simulate neutrino events conditioned on the particle's momentum. ➢ Implemented vector-quantized variational autoencoder (VQ-VAE) and auto-regressive model.	Boston, USA
Sept 2020 May 2020	Space Applications Center, ISRO <i>Research Intern</i> / Advisor: Dr. Neeraj Agarwal ➢ Implemented a two-stage Super Resolution Convolution Neural Network to increase the spatial resolution of Sea Surface Temperature (SST) fields from 15 km to 5km and then from 5km to 1km. ➢ Predicted images achieved a 12 dB higher PSNR (Peak Signal to Noise Ratio) than input images.	Remote

Honors and Awards

2023	Department Rank 1 , Among students graduating with B.E. Comp. Sc. and M. Sc. Phy.	BITS Pilani, India
2018 - 23	Institute Merit Scholarship , Awarded to top 2% academic achievers in batch of 1500.	BITS Pilani, India
2022	Globalink Research Award , Awarded \$6,000 for undergraduate thesis proposal.	MITACS, Canada
2021	Charpak Lab Scholarship , Among 15 students awarded funded internships in France.	Campus France
2021	DAAD-WISE Scholarship , Funded internship at a research lab in Germany.	DAAD
2020	Best Student Paper Award , Undergraduate Track at ACM SIGSPATIAL'20.	ACM
2018	INSPIRE Scholarship , Awarded to top 10,000 high school academic achievers in India.	Govt. of India
2016	Underwriter Laboratories , Granted \$750 to carry out a road safety campaign.	Youth Service America

Volunteer

WiML Workshop at NeurIPS 2025

San Diego, USA, Dec'25

NeurIPS Liaison, WiML Board of Directors

Supervised the organizing committee across all key domains: PR, logistics, sponsorships, and travel funding etc - to ensure the smooth execution of the San Diego and Mexico City workshops for 600+ participants [\[Event Agenda\]](#).

WiML Social at CoLM 2025

Montreal, Canada, Oct'25

Organizer

Organized WiML's first ever event at CoLM with 10+ mentors and 4 speakers attracting over 150 attendees. [\[Event Agenda\]](#).

Yessenov Data Lab Summer School

Almaty, Kazakhstan, Jul'25

Lecturer

Invited to deliver 40+ hours of practical and theoretical lectures on LLMs to a batch of 30+ grad students. [\[Curriculum\]](#).

WiML Workshop at NeurIPS 2024

Vancouver, Canada, Dec'24

Organizer

Served as Communications and PR Chair for an event with over 600 participants and 250+ poster presenters. [\[Event Agenda\]](#).

Publications

Gemini 2.5: Pushing the Frontier with Advanced Reasoning, Multimodality, Long Context, and Next Generation Agentic Capabilities [\[paper\]](#)

Gheorghe Comanici, Eric Bieber, ..., [Nikita Saxena](#)*, ..., Lorenzo Blanco, Leland Rechs

Submitted to Arxiv on 7 Jul 2025.

Multi-Fidelity Active Learning with GFlowNets [\[paper\]](#)

Alex Hernandez-Garcia*, [Nikita Saxena](#)*, Moksh Jain, Cheng-Hao Liu, Yoshua Bengio

Accepted to TMLR'24; Accepted to Workshop on Adaptive Experimental Design and Active Learning in the Real World, NeurIPS'23.

Learning to Detect: A Semi Supervised Multi-relational Graph Convolutional Network for Uncovering Key Actors on Hackforums [\[paper\]](#)

[Nikita Saxena](#), Vinti Agarwal

2021 IEEE International Conference on Big Data

[IEEE '21]

Towards Designing and Exploiting Generative Networks for Neutrino Physics Experiments using Liquid Argon Time Projection Chambers [\[presentation\]](#)

[Nikita Saxena](#), Paul Lutkus, Taritree Wongjirad, Shuchin Aeron

2021 Meeting of the Division of Particles and Fields of the American Physical Society

[DPF '21]

Efficient Downscaling of Satellite Oceanographic Data With Convolutional Neural Networks [\[paper\]](#)

[Nikita Saxena](#)

In Proceedings of the 28th International Conference on Advances in Geographic Information Systems. Association for Computing Machinery, New York, NY, USA, 659–660.

[ACM '20]

Implementation and Validation of Murrell's Version Kalman Filter for Attitude Estimation. [\[paper\]](#)

Gaurav Sharma, Tushar Goyal, Aditya Bhardwaj, [Nikita Saxena](#), Jeet Yadav

71st International Aeronautical Conference, Adv. Astronaut. Sci. Technol. 4, 91–106 (2021).

[IAC '21]

Selected Projects

Contrastive Learning for Particle Jet Classification

Aug'21-Dec'21

Project Advisor: [Dr. Tilman Plehn](#), Heidelberg University, Germany

- > Trained a self-supervised model to map particle jets to a representation space.
- > Performed classification on the obtained embeddings to obtain an AUC of 0.8.
- > **Tools:** scikit-learn, TensorFlow, Python.

[\[code\]](#)

Graph Neural Network for Position Reconstruction

Oct'20-Feb'21

Project Advisor: [Dr. Kaixuan Ni](#), University of California, San Diego

- > Reconstructed the position of collisions within XENON1T detector with a graph neural network (GNN).
- > GNN achieved a RMSE of 1.936 outperforming the conventional reconstruction framework, [Straxen](#), by 67%.
- > **Tools:** Spektral, Straxen, Keras, Python.

[\[code\]](#) [\[details\]](#)

Skills

Relevant Coursework	Deep Learning, Data Structures and Algorithms, Object Oriented Programming, Linear Algebra, Probability and Statistics, Discrete Mathematics, Quantum Information Computing
Programming	Proficient: Python, C++, Latex Familiar: C, MATLAB, Java, MySQL
Frameworks	Proficient: TensorFlow, Pytorch, Keras Familiar: JAX