

USNEEK SINGH

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TECHNICAL SKILLS

Languages: Python, C, C++, Java, SQL, Bash

Systems & Tools: Linux, Docker, Git, Kubernetes, AWS, Multi-threading/Concurrency, PyTorch, TensorFlow, Pandas

EDUCATION

MS in Computer Science, Georgia Institute of Technology, Atlanta, USA Expected May 2027

Relevant Coursework: Natural Language Processing, LLMs, Deep Reinforcement Learning, Machine Learning (**CGPA: 4.0/4.0**)

BS in Computer Science, Birla Institute of Technology, Pilani, India 2019 - 2023

Relevant Coursework: Probability & Statistics, Deep Learning, Data Structures & Algorithms, Linear Algebra, Computation

- Ranked in the **top 1%** among 1100 students in the academic batch of 2023 (**CGPA: 9.68/10**).

EXPERIENCE

JP Morgan Chase - Machine Learning Scientist Intern June 2026 – Aug 2026

Machine Learning Center of Excellence

New York, USA

- Built an **LLM-agent** that dynamically adapts its shape and workflow based on the cost, quality and latency constraints.
- Designed a news analytics platform that retrieves articles by intent and surfaces **entity-level sentiment** on financial themes.

Georgia Tech - Graduate Research Assistant Nov 2025 – Present

NLP-X Lab, Advisor: Prof. Wei Xu

Atlanta, USA

- Built the first **pragmatic evaluation** benchmark for Indic languages revealing LLM failures that existing benchmarks miss.
- Designed an **LLM-based human-learner simulator** that mimics real human emotion, intent, and style via RLHF.
- Built an evaluation framework to measure LLM fidelity in simulating **multi-turn human learning** dynamics.

Microsoft - Research Engineer Sep 2023- Jul 2025

Program Synthesis (PROSE) team

Redmond (remote)

- Developed NL validation strategies to obtain **high-quality synthetic data** for fine-tuning LLMs in low-resource settings.
- Managed and deployed end-to-end pipeline for **fine-tuning LLMs** on NL to spreadsheet formula task in Excel Copilot.
- Curated an evaluation dataset for LLM-based code auto-completion on **long-context, semi-structured** data.

American Express - AI Intern Jan 2023- Jul 2023

Artificial Intelligence Laboratory

Bengaluru, India

- Trained four **Transformer-based** ML models on credit fraud prediction problem with **tabular and continuous features**.
- Adapted these techniques to large-scale industry data, enhancing performance by **3%** over the base LightGBM approach.

PUBLICATIONS

VakyArth: Probing Pragmatic Competence in LLMs across Indic Languages [PDF] EMNLP 2026

Asking Language Models How to Represent Data for Fine-Tuning [PDF] ACL 2026 (SURGeLLM)

An Empirical Study of Validating Synthetic Data for Formula Generation [PDF] NAACL 2025

Comparative Analysis of Transformers for Modeling Tabular Data [PDF] CODS-COMAD 2024

MFDN: Multiception Feature Distillation Network [PDF] TENCON 2022

RELEVANT PROJECTS

Self-Improving LLMs via Implication Learning [Report]

Built SImpL, a self-improving LLM framework that distills context into reusable implications instead of query-specific answers, matching SEAL's accuracy with 20× less training time and improving reasoning accuracy by up to 10.5 points.

Risk-aware Actor-Critic RL [Report]

Built two risk-aware variants of the TD3 RL algorithm that let an agent explicitly trade off average performance against worst-case outcomes, which outperforms the standard TD3 in MuJoCo environments with rare but severe failures.

Creation of Custom Compiler in C [Report]

Designed a custom compiler implementing all phases from parsing to assembly code generation from scratch in C.

SKILLS AND AWARDS

- **Teaching Assistant:** Worked as Teaching Assistant for three courses - Machine Learning, Algorithms & Programming, managing over 1000 students.
- **Student Representative:** Elected to represent peers in Department of Computer Science faculty meetings, BITS Pilani.
- **NTSE Scholarship:** Ranked in the **top 750** among 200,000+ applicants on the National Science Exam in India, 2017.
- **DAAD-WISE Scholarship:** Received a scholarship worth \$10000 from DAAD, Bonn for a research internship in Germany.