Prakhar Gupta

Indian Institute of Technology, Goa

Fourth Year **Undergraduate**, **Computer Science and Engineering**
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Education

BTech, Computer Science and Engineering, Indian Institute of Technology Goa	CGPA : **7.55/10**	2021 – Present
Class 12, CBSE, St.Xavier's High School, Ailwal	Aggregate: **93.2** %	2019 – 2021
Class 10, ICSE, Jyoti Niketan School, Atlas Tank	Aggregate: **95.4** %	2017 – 2019

Experience

Technology Analyst, ProcDNA (Jan 25 – Present)
- Improved query performance by 27% by implementing column encoding.
- Automated QC processes in PostgreSQL and validating data integrity through covariance checks.
- Delivered 10+ dashboard solutions for a pharmaceutical client, focusing on data management and analytics.

Research Intern (Jul 24 – Dec 24)
Under Guidance of Dr. Shitala Prasad | IIT Goa| Published in IIT-Roorkee Socprocs 2025
- Contributed 2 coral species **image datasets** and trained deep learning models, to public domain .
- Supported environmentalist by open-sourcing the project to aid coral conservation and biodiversity monitoring.
- Multispecies Classification: GoogleViT hit **98.36%** on **32 species**; ResNet-50 and CocaViT followed with 91.03% and 90%.

Projects

Novel AutoComplete [Github] (May 24 – Jun 24)
- Engineered a LSTM architecture resulting in a 30% improvement compared to RNN.
- Used TensorFlow and incorporated Beam Search for decoding text sequences for higher accuracy.
- Extended the model to use Transformer architecture, reducing training time by 65% over traditional model.

GPT-2 From Scratch by Andrej Karpathy[Github] (Oct 24 – Nov 24)
- Built a GPT-2 style language model from scratch using Python and PyTorch.
- Trained models on NVIDIA DGX systems, achieving 10% higher accuracy and 50% faster convergence.
- Developed core Transformer components (tokenization, self-attention, training loops) with 98% code efficiency.

Thinking, Fast and Slow Agent[Github] (Jan 24 – Apr 24)
- Built a LangGraph essay agent, improving writing quality by 30%.
- Implemented Reflection prompting, boosting self-critique accuracy by 40%.
- Designed dynamic state transitions, enabling 5+ multi-step reasoning loops per essay.

Skills

Programming Skills:	C++, C#, Python, Bash, SQL, CUDA C
Software Skills:	Git, VS, VS Code, Databricks, Docker, AWS, Tableau
Frameworks/Libraries and OS:	Ubuntu, PyTorch, TensorFlow, Sci-kit-learn, LangChain, LangGraph, PySpark
Relevant Coursework	Machine Learning, Artificial Intelligence, Optimization, Computer Vision, Deep Learning

Positions of Responsibility

Wing Representative	Hostel Wing Representative in Student Panchayat	(2022 – 2023)
Core-Member	Alpha - Finance Club of IIT Goa	(2023 - 2024)
Event Overseer	Cepheus KBC Event Overseer	(2023 – 2024)

Extracurriculars & Hobbies

- Gaming enthusiast, engaging in fps, strategic, indie and open-world gameplays.
- Dedicated bookworm with a love for literature, exploring diverse genres and authors.
- Competitive table tennis player, participating in tournaments and friendly matches in spare time.
- Committed to environmental stewardship, volunteering with Varaha, the Climate Change Society, to clean various beaches.