

Smayan Agarwal

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Education

Ashoka University, Haryana, India

August 2022 – May 2026

B.Sc. (Hons) in Computer Science and Mathematics with a Minor in Physics

- Cumulative GPA: **3.77/4.00**
- Major GPA: **3.78/4.00**

Internships and Work Experience

Alt Carbon | Intern

June 2025 – August 2025

- Conducted a **meta-analysis** of Machine Learning and Computer Vision applications in soil science to direct the company's climate dataset utilization strategy.
- Authored a **comprehensive PRD** defining the mathematical logic, data cleaning, and processing workflows for the credit calculation and verification engine.

Raman Research Institute | Research Associate

June 2024 – December 2024

- Conducted **quantum computing research** under the supervision of Professor Urbasi Sinha at the Quantum Information and Computing Lab (QuIC), continuing beyond the summer internship period.
- Developed novel quantum algorithms incorporating Quantum Fourier Transform techniques to **optimize signal processing** for one-dimensional and two-dimensional datasets.

BITS Pilani, Goa Campus | Research Associate

May 2024 – June 2024

- Processed and analyzed **remote sensing data** from Navsat and Sentinel geosatellites to gather comprehensive forest coverage data across the Western Ghats region.
- Applied **ensemble machine learning** techniques, including Bagging and Random Forest algorithms, to predict biomass content and quantify carbon sequestration potential of forest ecosystems.

Confluence Media | Research Intern

May 2023 – July 2023

- Led research and production efforts for a documentary series on **sex work in India** under the mentorship of distinguished journalist Josy Joseph, contributing to critical discourse on social issues.
- Conducted extensive research and actively participated in recording and shooting of episodes.

Publications

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- Agarwal, S., Faizi, A. A., Singh, S., & Thakkar, A. (2025, November). *From Transformers to Weighted Automata: Towards the Verification of Large Language Models*. Paper presented at the 13th International Symposium "From Data to Models and Back" (DataMod), co-located with SEFM 2025, Toledo, Spain.