

AARYAN NAGPAL

aaryan.nagpal\_asp25@ashoka.edu.in, 20 years  
9599799022



EDUCATION

P.G.D in Ashoka Scholars Program	Ashoka University		2025	/4 CGPA
B.Sc (Hons) in Computer Science	Ashoka University	Ashoka University	2024	3.65 /4 CGPA
CLASS XII in SCIENCE	The Scindia School	CBSE	2021	96.1 %

**Technical Proficiency** Machine Learning, Python3, Tensorflow, Keras, Pandas, NumPy, Rust, Git, C Programming, Django REST

INTERNSHIPS EXPERIENCE

**HP INDIA | Software Developer Intern** Jun 2022 - Nov 2024

- Engineered tree-based and regression-based machine learning algorithms using **NumPy** and **Pandas** as part of a 3-member team to predict support issues in printer logs and customer calls; elevating prediction accuracy from 50% to **80%**, improving issue resolution capabilities.
- Optimized an audit co-pilot using **TensorFlow**, HuggingFace Models, and **BERT**, boosting performance by **30%** through automating the audit process for 100+ customer call transcripts by streamlining tasks such as translation, emotional analysis, and similarity analysis.
- Contributed to developing **Python-Flask-based** retrieval system to automate data extraction and updating for JSON-formatted databases, enhancing performance by **35%** by digitizing the manual assembly documentation process for HP products and reducing processing time.

**MPHASIS | Research Intern** May 2024 - Aug 2024

- Implemented an **NLP-based query system** using GraphDB and OpenAI, enabling efficient access to Indian food information from a comprehensive knowledge graph for intelligent health, location, and finance-focused personal food consumption decision-making.
- Optimized response times by reducing API calls to LLMs through **SentenceTransformers** for query matching with cached queries by **50%**.
- Integrated multilingual and visual/audio capabilities with Translate and Bhashini API to enhance user accessibility and experience.

**MAMMOTH ANALYTICS | Software Engineer Intern** Jun 2024 - Jul 2024

- Automated messaging-based data retrieval tasks from CLI inputs using **Boto** for Zulip bots, increasing automation capabilities by **20%**.
- Developed and tested Python-based querying functions to ensure optimal performance and reliability within the Zulip application.
- Redesigned message and argument parsing from CLI to Zulip bots, implementing formatting to streamline automation processes.

PROJECTS

**Patient Care Pathway Analysis (Capstone Research Project) - Data Science and Healthcare** Jul 2024 - Present

- Collaborating with [Prof. Lipika Dey](#) to analyze high-dimensional **MIMIC-IV** EHR data, creating dynamic patient-specific treatment visualizations, and **identifying key predictive features** to improve early disease detection for further research in personalized healthcare.
- Leveraging machine learning algorithms to model ideal patient behavior, providing insights for optimized care in cases of deviation.
- Developing parsing modules for processing multi-structured EHRs, facilitating automated extraction of critical medical information.

**Health Information Chatbot - Natural Language Processing and Healthcare** May 2024 - Present

- Engineering a Health Information Retrieval Chatbot with [Prof. Anirban Sen](#) (PhD, IIT Delhi) using **LLaMA 3.1 8B** for medical experts.
- Extracting data from health databases and large corpora to develop a comprehensive knowledge graph for efficient information retrieval.
- Constructing a **Neo4j-based** graph database to host the knowledge graph with similarity-based features to enhance retrieval accuracy.

**AgBot - Robotics** Jun 2023 - Jul 2023

- Developed a mobile robot using **Python** and **C++** on **Arduino UNO**, ESP32, and **Raspberry Pi** for agricultural research. [Project Link](#)
- Designed and implemented a socket-based network for concurrent data transfer between server and client bots via Bluetooth and Wi-Fi.
- Analyzed the collected data to provide insights into soil quality and environmental factors for decision-making in farming projects.

POSITIONS HELD

**Teaching Assistant | 1/50 selected | Ashoka University** Jan 2024 - May 2024

- Facilitated learning under [Prof. Anirban Sen](#) (PhD, IIT Delhi) for a class of 50+ students, focusing on algorithm design and analysis.
- Implemented a grading rubric, assessed student performance, and led office hours and discussion sessions to guide student understanding.

**Vice President | Founded | Special Olympics Bharat Ashoka Chapter** Sep 2022 - Aug 2023

- Led a team of 20+ students to launch a **sports awareness campaign** for children with special needs, collaborating with schools in Sonipat.
- Orchestrated 5+ events for 100+ special needs children, including sports day celebrations, engaging **30+** volunteers & **100+** attendees.

**Vice President | 1/20 selected | Ashoka Orators Club** Sep 2022 - Aug 2023

- Directed a team of 50+ members to create a speaking community of 300+ students on campus, executing events, and oration sessions.
- Spearheaded 5+ events for students and faculty, such as the Faculty Debate & Student Speaker Series, attracting 200+ students per event.

AWARDS AND ACCOMPLISHMENTS

**Cum Laude | Ashoka University** 2024

Earned Cum Laude honors for exceptional academic achievement across semesters, awarded for maintaining a CGPA above **3.65**.

**Teaching Assistantship Excellence Award | Ashoka University** 2024

Commended for outstanding teaching assistance and student mentorship, selected from 30 TAs, by securing **5/5** student evaluation score.