Aaryan Nagpal

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EDUCATION

- **Ashoka University**
  Bachelor of Science - Computer Science; CGPA: 3.63/4
  Sonipat, India
  July 2021 - Present

- **Scindia School**
  High School Diploma - 12th; Percentage: 96.1 %
  Gwalior, India
  April 2021

- **Scindia School**
  High School Diploma - 10th; Percentage: 96 %
  Gwalior, India
  April 2019

SKILLS SUMMARY

- **Languages**: English, Hindi
- **Coding Languages**: Python, C, PosgreSQL
- **Tools**: Git, MySQL, GitHub, NumPy, Pandas, Django REST, Flask
- **Applications**: Android Studio, Microsoft Office, Adobe Photoshop, Adobe Premiere Pro
- **Platforms**: Linux, Windows, Arduino, ESP32
- **Soft Skills**: Leadership, Public Speaking

WORK EXPERIENCE

- **Hewlett-Packard India Software Operations**
  Software Developer Intern
  Onsite and Remote
  Jun 2022 - Present
  - **Intelligent Insights Project**
    - Building a predictive model utilizing Machine Learning algorithms to provide intelligent insights to predict and identify printer issues by analyzing data from printer logs and customer support calls.
  - **Audit Co-Pilot Project**
    - Leveraging Machine Learning techniques to automate call auditing process.
    - Utilizing fine-tuning and re-training methodologies to enhance the performance of existing models specifically tailored for the Asia-Pacific region.
  - **TR Digitization Project**
    - Worked on digitizing manual data input documents in manufacturing to automate the assembly process and increase efficiency at RCB Analytic and Advanced Computing Lab.
    - Used Python and Flask to develop a question-answer system from a database consisting of digitized documents in JSON format to facilitate seamless data retrieval

- **Mammoth Analytics**
  Database Management Intern
  Remote
  Dec 2023 - Feb 2024
  - **Benchmarking DuckDB**
    - Engaged in developing automation tools to conduct and streamline the benchmarking process for the DuckDB Database across multiple systems for different sizes and operations.

- **uTrade Solutions**
  API Development Intern
  Remote
  May 2022 - Aug 2022
  - **API Development**
    - Designed and implemented REST APIs for FinTech companies specializing in algotrading to enable efficient and effective data exchange.
    - Utilized Django REST framework and Python programming language to provide functional integration solutions.

RESEARCH EXPERIENCE

- **Ashoka University**
  Research Intern
  Onsite
  Mar 2023 - Aug 2023
  - **Folk Computing Project**
    - Contributing to the development of a multilingual health chatbot that uses an acoustic interface to communicate in local languages.
    - Working and researching under Dr. Jia Li and Prof. Ramesh C. Jain to investigate different prompting techniques, modeling approaches, and data inference methods aimed at enhancing the effectiveness of the chatbot.
    - Collaborating with Stanford University, HealthUnity, and the University of California Irvine (UCI)

- **Mphasis Lab**
  Machine Learning Research Intern
  Onsite
  May 2023 - Aug 2023
  - **Food Recommendation System**
    - Creating a knowledge graph that encompasses food items, ingredients, recipes, and nutrition information. Gathering data by scraping food recipes and implementing Named Entity Recognition (NER).
    - Incorporating the FoodKG platform and advancing the ontology and schema using reference from FoodKG and Recipe1M+ Dataset.

Teaching Experience

- **Ashoka University** On-site
  Teaching Assistant *Jan 2024 - Present*
  - Working as a Teaching Assistant for **CS-1207: Design and Analysis of Algorithms**, and managing a 50+ student class under the guidance of Prof. Anirban Sen.

- **Ashoka University** On-site
  Teaching Assistant *Sept 2023 - Dec 2023*
  - Working as a Teaching Assistant for **CS-1216: Computer Organizations and Systems**, and managing a 60+ student class under the guidance of Prof. Goutam Paul.

- **Plaksha University** On-site
  Teaching Assistant *May 2023 - June 2023*
  - **Microcontroller Sessions**
    * Conducted instructional sessions in a Microcontrollers course, guiding students in comprehending the ESP32 chipset, electronics principles, and programming concepts.
  - **AgBot Project Mentoring**
    * Assisted students in utilizing Raspberry Pi, microcontrollers, and various electronic components to construct AgBot, an agriculturally focused IoT project.

Projects

- **Folk Computing App (February 2023 - Present)**: To give access to non-English speakers to the facilities of AI-generated models to access medical information by taking audio input in the local language, translating it to English for AI to generate desired output, and translate the output back to the local language to be played to the user. Currently co-authoring the manuscript for the same.

- **AgBot (May 2023 - June 2023)**: Designed and built a versatile mobile robot, equipped with sensors and camera, to be used in agricultural research. Uses Arduino UNO and Raspberry Pi to navigate and receive soil moisture data and green percentage of the fields it travels on.

- **Exploring Cryptography using Python (August - November 2022)**: Explored cryptosystems and implemented elementary Elliptical Curve and RSA cryptosystems, along with ECDH key exchange in Python.

- **N-Body Problem Simulation using Python and VPython (May 2022)**: Developed a simulation of the N-Body problem using Python programming language and VPython to animate the solution

- **Navigation Glove using Arduino Uno (October 2019)**: Developed a glove that used sound waves to assist visually impaired in navigating. The device measured distance with time it took for sound waves to bounce back, and used beeping sounds with increasing frequency to indicate proximity of obstacles.

Positions of Responsibility

- **Vice President, Orators Club, Ashoka University (Aug 2022 - Aug 2023)**: Led club activities, facilitated events, managed member and admin relations. Expanded club, provided technical support, and demonstrated strong leadership and communication skills.

- **Vice President, Special Olympics Bharat Ashoka Chapter, Ashoka University (Jun 2022 - Aug 2023)**: Founded and led the club, providing support and opportunities for children with disabilities. Established connections with SOB Haryana, spread awareness, and organized events to promote inclusiveness.

- **Core Team Member & POC, Campus Life Ministry, Ashoka University (Apr 2022 - Apr 2023)**: Contributed as a vital member of the Campus Life Ministry team, serving as the primary point of contact. Organised campus events around campus, such as Zero Waste Day and assisted in solving problems faced by students.

- **House Prefect, Scindia School (Jul 2020 - Apr 2021)**: Responsible for overseeing hostel operations, assisting Warden to ensure smooth functioning and improving student life.

- **Senior Under Officer, National Cadet Corps (Aug 2019 - Feb 2020)**: Led school brass band contingent in Prime Minister's Rally. Participated in Republic Day parade with brass band displays.

Honors and Awards

- Dean's List, Ashoka University - May, December 2022
- Bronze Standard, International Award for Young People - April 2020

Volunteer Experience

- **Republic Day Camp, National Cadet Corps**: Participated in the Republic Day Camp 2018 and 2020. Marched on Rajpath on Republic Day 2018 and 2020. Led the Prime Minister's Rally for my band in 2020. (Dec 2017 - Feb 2020)
- **Computer Training Camp, Arya Samaj**: Taught basic computer skills to underprivileged female students, such as MS Office, email writing, web browsing etc., to improve their future opportunities. (May 2022 - Jul 2022)
- **Awareness through Sports, Special Olympics Bharat**: Worked on facilitating sports events and games for specially challenged children, promoting physical activity and a fun, inclusive environment. (Apr 2022 - Jul 2022)
- **Leadership Programme, INME**: Part of leadership program organised by INME. Held a cleanliness drive in Lodhi Garden, New Delhi and conducted surveys regarding women safety. (Oct 2018 - Nov 2018)
- **Bhind Uplifting Project, Scindia School**: Constructed a boundary wall around the school, repaired and painted 3 classrooms, and conducted surveys to assess the needs of the school and the surrounding community. (Oct 2017 - Nov 2017)

Certifications

- **Machine Learning Specialization** - Stanford University & DeepLearning AI
- **Introduction to Linux** - LinuxFoundationX
- **Getting started with Git and Github** - IBM
- **Getting started with Go** - University of California
- **Using Python for Research** - HarvardX
- **Blockchain: Understanding its Uses and Implications** - LinuxFoundationX
- **AI for Everyone: Master the Basics** - IBM
- **Data-driven Astronomy** - The University of Sydney
- **Introduction to Cloud Development with HTML, CSS, and JavaScript** - IBM
- **Understanding Einstein: The Special Theory of Relativity** - Stanford University
- **From the Big Bang to Dark Energy** - The University of Tokyo