

Nandini Agrawal

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EDUCATION

Columbia University

Master of Science in Computer Science

New York, NY

Dec 2022

Ashoka University

Postgraduate Diploma in Advanced Studies, Bachelor of Science

Haryana, IN

May 2021

Major: Computer Science; GPA: 3.96/4.0 (Diploma) and 3.82/4.0 (UG).

Honors/Awards: Summa Cum Laude, Dean's List, Gold Medal for Academics.

WORK EXPERIENCE

Columbia University

Graduate Teaching Assistant

New York, NY

Sep 2021 - Present

- Mentored students for the course: Applied Machine Learning in Fall 2021, hold office hours, design and grade assignments.

Koc University

International Summer Research Intern

Istanbul, TR (Online)

Jul 2020 - Sep 2020

- Devised Blocksnet, a simple, efficient, high performance, network-based blockchain simulator, with three team members (Tools : Python, AWS and Socket Programming). Produced a paper and presented it at the Basarim'20 conference.

Ashoka University

Research and Software Development Intern

Haryana, IN (Online)

Jun 2020 - Aug 2020

- Developed CovidBloc, a system involving an android(Flutter) mobile application and a web portal(Vue) with blockchain powered contact tracing (NodeJS server and Hyperledger Fabric) to track and prevent the spread of COVID-19.

Kings College London and Trivedi Centre for Political Data

Intern

London, UK (Online)

May 2020 - Aug 2020

- Created an automated scraping system using Selenium to extract and clean useful documents released by the Indian government to tackle the Covid-19 pandemic.
- Executed a document classifier using NLP techniques to classify these documents topic wise.

SKILLS

- Technical: Python, AWS components, NodeJS, Javascript, Tensorflow, Keras, Pyspy, Hyperledger Fabric, Docker, Selenium, MongoDB, NoSQL, HTML/CSS, Github, Latex, Jupyter Notebook, Postman, Flutter, Java.

PROJECTS

Conversational Dining Concierge Agent, Artificial Intelligence

Sep 2021 - Present

- Built a concierge agent to give restaurant recommendation to users for a particular location and cuisine.
- Scrapped the top 5000 hotels in NY data from Yelp using a python selenium scraper to populate the database.
- Accomplished using microservices such as AWS S3 Bucket, Lambda Functions, AWS Lex and DynamoDB.

Synthetic Data Generation and Secure ML, Privacy Preserving Machine Learning

Aug 2020 - May 2021

- Generated synthetic data in python with the help of conditional Generative Adversarial Networks and Monte Carlo Markov Chain : Gibbs Sampler to model sexual harassment cases in India.
- Implemented a linear regression model over a socket in a secure 2 party environment as per the protocols mentioned in the Secure ML paper. Programmed a Federated learning model (from scratch) on the MNIST fashion data set to compare with other models .

Data Decision Support, Data Mining and Warehousing

Apr 2021

- Scrapped data about top hotels from Booking.com by programming a python selenium based scraper.
- Cleaned data and performed analytics such as polarity score and clustering. Visualised the top 10 hotels based on score in Mapbox.

Automatic Essay Grader, Machine Learning and NLP

Oct 2020 - Dec 2020

- Created a Bidirectional LSTM based machine learning model with embeddings for grading standardised test essays using the Hewlett Foundation dataset (Tools : Python, NLTK, ML libraries - Keras, Tensorflow).

Image Coloriser, Machine Learning

May 2020

- Built an Image Coloriser designed to convert black and white images to coloured images using a Convolutional Neural Network model and a subset of the LFW dataset.
- Executed using these tools: Python, Machine learning libraries - Keras, Tensorflow.

Hyperfunds, Blockchain Development

Mar 2020 - May 2020

- Developed a distributed application to help faculty at Ashoka University reliably spend research funds with approval from the right administrators (Tools : Hyperledger Fabric, Python, NodeJS, REST, Docker, Amazon Web Services).