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Nandini Agrawal

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EDUCATION

Ashoka University | Sonipat, Haryana — August 2020 - May 2021
Candidate for Postgraduate Diploma in Advanced *Studies and Research*
Major: Computer Science
Major GPA: 0.00/4.00 | *Cumulative GPA:* 0.00/4.00
Relevant Coursework : Calculus*, Unstructured Information Processing*, Capstone Project: Privacy Preserving Machine learning*

Ashoka University | Sonipat, Haryana — August 2017 - May 2020
Bachelor of Science(Hons)
Major: Computer Science
Major GPA: 3.9/4.00 (16 courses) | *Cumulative GPA:* 3.82/4.00
Honors/Awards: Magna Cum Laude; Silver Medal for Academic Achievement; Dean's List (5 semesters)
Relevant Coursework : Machine Learning,Linear Algebra, Discrete Mathematics, Probability and Statistics, Blockchain and Cryptocurrencies, Computer Security and Privacy, Federated Learning, Algorithms design and analysis, Computer Programming, Computer Networks

Mayo College Girls' School | Ajmer, Rajasthan — April 2017
Honors/Awards: School colours for excellence in Computer Science and Squash, Computer Science President, Squash Captain, Scholarship for securing 95% and 94% in 12th and 10th grade respectively.

PROFESSIONAL EXPERIENCE

Ashoka University, *Teaching Assistant*|Sonipat, Haryana — August 2019- December 2020
- Appointed as a teaching assistant for three courses : Computer Organisation and Systems, Introduction to Computer Programming and Computer networks in 3 different college semesters.
- Mentored a core of 40+ students, delivered lectures, graded assignments, provided feedback to students.

Koc University, *International Summer Research Intern |(Online)* — July 2020- September 2020
- Implemented ***Blocksim-Net***, a simple, efficient, high performance, network-based blockchain simulator.
- Collaborated with a team of 4 to build this simulator which simulates bitcoin and ethereum networks along with selfish mining attacks on these networks.
- The paper was accepted and presented at the Basarim'20 conference.

Ashoka University,Research and Software Development *Intern*|(Online) — June 2020- August 2020
- Developed Covidbloc, a system involving an android mobile application and a web portal that uses blockchain powered contact tracing to track and prevent the spread of COVID-19.
- Our team(of 3) submitted the proposal to the Space'20 conference.

Kings College London and Trivedi Centre for Political Data, *Intern*|(Online) — May 2020- August 2020
- Created an automated scraping system to extract useful documents released by the Indian government to tackle the Covid-19 pandemic.
- Implemented a document classifier to classify these documents sector wise/topic wise.
- Extracted important information by analysing these policies and displayed this information graphically.

Metlife, Data Analysis *Intern*|Noida, Uttar Pradesh — June 2019- July 2019
- Implemented a regression model to forecast sales of the company.
- Extracted important information by analysing these sales and wrote a report.

PROJECTS

Secure ML, *Privacy Preserving Machine Learning*|Python, Socket Programming, Machine learning library - Pysyft
- Implementing a linear regression model in a secure 2 party environment as per the protocols mentioned in the Secure ML paper.
- Implemented a basic Federated learning model(from scratch) on the MNIST fashion data set.

Hyperfunds,Blockchain Development|Hyperledger Fabric, Python, NodeJS, REST, Docker
- Developed a simple distributed Hyperledger application that can help faculty at Ashoka University reliably spend their research funds with approval from the right administrators.

Conversational Chatbot and Image Coloriser, *Machine Learning* |Python, Machine learning library - Keras, Tenserflow
- Implemented a conversational chatbot using the Cornell movie dataset and a seq2seq model with attention.
- Image Coloriser dealt with converting black and white images to coloured images using a convolutional neural network model and a subset of the LFW dataset.

PUBLICATIONS

- N. Agrawal, P. Ramachandran, O. Biçer, A Küpçü. 2020. Blocksim-Net: A Network-Based Blockchain Simulator (Journal publication in progress)

OTHER ACCOMPLISHMENTS

- **Triquetra Squash Championship,IITD :** Secured the ***first*** position in the inter-college women's individual squash championship.
- **Explore ML and Big Data :** Completed the certified ***Big Data*** course by ***Jennifer Widom*** and ***Explore ML*** course by ***Google***.