

SUMMARY

I extract and analyze actionable insights from unstructured data through rigorous data wrangling and analysis. Leveraging my domain understanding and predictive modeling skills, I recommend solutions for various applications. During my free time, I pursue research at the intersection of Computer Vision and NLP, with a focus on knowledge representation and reasoning problems in texts and images.

EDUCATION

Post Graduate Diploma in Advanced Studies & Research

Magna Cum Laude, Ashoka University

Aug 2021 - May 2022

Sonipat, India

B.Sc (Hons.) in Computer Science

Magna Cum Laude, Ashoka University

Aug 2018 - May 2021

Sonipat, India

WORK EXPERIENCE

Data Scientist

Vayana Network

Jun 2022 – Present

Bangalore, India

- Implementing a scalable data architecture solution on *AWS* for the company, including a data lake and data warehouse to store and process large volumes of data efficiently.
- Providing analytical support to business growth and strategy by conducting in-depth data analysis and modeling to identify key trends, patterns, and insights, enabling informed decision-making and driving organizational success.

Data Science Intern

Ageless Partners

Nov 2021 – Mar 2022

Remote

- Formulated a comprehensive road map for the development of a fitness recommendation system based on wearable devices and led the team toward implementing the first milestone.
- Provided data analysis and visualization support to the research team to make their de-aging investigation more analytical and data-driven.

Web Developer

Techvik

Jun 2020 – Sep 2020

Remote

- Redesigned and remodeled the platform's website on *WIX* increasing the user traffic by up to 20 %.
- Optimized the website's load time and increased its SEO performance by 30 % through media optimization and extensive keyword tagging.

RESEARCH EXPERIENCE

Privacy Preserving Neural Networks

Capstone Project, Ashoka University

Aug 2021 – Dec 2021

Sonipat, India

- Mentors: [Prof. Mahavir Jhavar](#) & [Prof. Debayan Gupta](#)
- Researched and explored various methods and techniques for securely and efficiently training neural networks in multi-party settings (MPC).
- Thoroughly analysed and implemented (in C++) the [SecureNN](#) paper as my Capstone Project. [[Presentation](#) | [Report](#) | [Code](#)]

Research Intern

Mphasis Lab, Ashoka University

May 2021- Aug 2021

Sonipat, India

- Mentor: [Prof. Mahavir Jhavar](#)
- Successfully studied and implemented (in C++) different PPML (Privacy Preserving Machine Learning) protocols such as *SecureML* and *BLAZE* highlighting their merits and demerits. [[Details](#) | [Code](#)]
- Brainstormed and evaluated ideas for developing faster and more secure PPML protocols tailored to meet business requirements (under development).

Secure Machine Learning

Independent Study Module, Ashoka University

Jan 2021 – May 2021

Sonipat, India

- Mentor: [Prof. Debayan Gupta](#)
- Investigated the security aspects of different ML algorithms such as One Shot Learning using *NumPy* and *scikit-learn*.
- Demonstrated the attacks in the [Subpopulation Data Poisoning Attacks](#) paper to better understand the impact of Data Poisoning Attacks on machine learning models. [[Presentation](#) | [Code](#)]

Applied Cryptography

Independent Study Module, Ashoka University

Jan 2021 – May 2021

Sonipat, India

- Mentor: [Prof. Mahavir Jhavar](#)
- Examined and evaluated the security vulnerabilities present in email clients that support the two primary forms of end-to-end email encryption: OpenPGP and S/MIME
- Illustrated the attacks on various email clients outlined in the [Mailto: Me Your Secrets](#) paper and suggested countermeasures against them. [[Report](#) | [Code](#)]

KEY PROJECTS

Headline Generation via Abstractive Text Summarization

Spring 2022

- Mentor: [Prof. Lipika Dey](#)
- Explored various text summarization techniques, with a particular emphasis on *Transformer*-based models, to identify optimal solutions for generating brief and informative summaries.
- Fine-tuned Google's **Pegasus** model with 568 million parameters using *PyTorch* to generate concise headlines from summaries of local news articles. [[Presentation](#) | [Code](#)]

Synthesizing DFAs

Spring 2021

- Mentor: [Prof. Mahavir Jhawar](#)
- Thoroughly examined and analyzed the backpropagation algorithm used to calculate gradients in recurrent neural networks.
- Implemented an RNN-based model in *Python* to automate the process of synthesizing DFAs. [[Presentation](#) | [Code](#)]

Age & Gender Detection

Monsoon 2020

- Mentor: [Prof. Ravi Kothari](#)
- Evaluated the strengths and weaknesses of different ML algorithms and techniques for correct classification of human faces.
- Developed industry-level CNNs using *Keras* to identify the age and gender of human facial images. [[Report](#) | [Code](#)]

TECHNICAL SKILLS

Languages	Python, C/C++, JavaScript, HTML5/CSS, \LaTeX	Data Analysis	R, SQL, MongoDB, Pandas, PySpark
Modeling	TensorFlow, PyTorch, <i>scikit-learn</i> , Numpy	Software Dev.	Django, React JS, Vue JS, Git
Other Tools	AWS, Plotly & Dash, Linux, Selenium		

TEACHING EXPERIENCE

Undergraduate Teaching Assistant

Multiple Semesters

[Computer Science Department](#), Ashoka University

Sonipat, India

- **Discrete Mathematics** (CS - 1104), Spring 2021, Prof. Subash Bhalla, Class Size: 100
Tasks: holding weekly office hours, setting and grading assignments and test papers, and facilitating online lectures.
- **Probability & Statistics** (CS - 1208), Monsoon 2020, Prof. Mahavir Jhawar, Class Size: 80
Tasks: holding weekly office hours, grading assignments and test papers, and facilitating online lectures.

STEM Facilitator

Jun 2019 - Jul 2019

[Maa Anandmayee School](#)

Dehradun, India

- Helped the school build a STEM lab partnering with MakersBox Delhi through equipment selection, procurement, and setup.
- Taught students about the latest technologies and inquiry in STEM education like Robotics, Lego, IoT, VR, etc. through hands-on projects.

Private Tutor

Aug 2017 - Jul 2018

[Next Education Academy](#)

Kathmandu, Nepal

- Tutored high school students in various A-level subjects, including Physics, Chemistry, and Mathematics.
- Assisted in scheduling and facilitating the academy's tutoring classes.

LEADERSHIP & ACTIVITIES

Resident Assistant, Office of Student Affairs	2021 – 2022
Peer Mentor, Office of Learning Support	2020 – 2021
IT Team, Ashoka University Election Commission (AUEC)	Feb 2020
Event Organizer, Ashoka University International Student Association (AUISA)	2018 – 2020
Ashoka Volleyball Team	2018 – 2020

AWARDS & SCHOLARSHIPS

Full Scholarship on Tuition and Residence, Ashoka University	2018 – 2022
Merit Scholarship on Tuition and Residence, Budhanilkantha School	2016 – 2017
Baniya Excellence Award for Academic Achievement, Budhanilkantha School	2015
NP Sharma Excellence Award for Academic Achievement, Budhanilkantha School	2015