

EDUCATION

PG Diploma in Advanced Studies & Research in CS

GPA: 3.88/4.00, Ashoka University

Aug 2021 - May 2022

Sonipat, India

B.Sc (Hons.) in Computer Science

GPA: 3.87/4.00, Ashoka University

Aug 2018 - May 2021

Sonipat, India

WORK EXPERIENCE

Data Scientist

[Vayana Network](#)

Jun 2022 – Present

Hybrid | Bengaluru, India

- Processing and managing the company's data efficiently and securely by building a central data repository on AWS through data pipelines and internal libraries.
- Investigating the company's business network through data analysis and graph modeling to identify key patterns, trends, and potential customers shaping the company's business growth strategies.

Data Science Intern

[Ageless Partners](#)

Nov 2021 – Mar 2022

Remote

- Designed the architecture for a fitness recommendation application based on wearable devices and led the team toward implementing the first milestone.
- Assessed the effectiveness of different anti-aging drugs and products endorsed by the company through analysis of customer feedback data.

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

Research Intern

[Mphasis Lab](#), Ashoka University

May 2021- Aug 2021

Sonipat, India

- Mentor: [Prof. Mahavir Jhawar](#)
- 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](#)]
- Designed a faster protocol tailored to meet business requirements by developing a novel algorithm to securely evaluate non-linear functions using arithmetic shares.

Secure Machine Learning

Independent Study Module, Ashoka University

Jan 2021 – May 2021

Sonipat, India

- Mentor: [Prof. Debayan Gupta](#)
- Studied the impact of adversarial attacks such as Data Poisoning and Model Evasion on the performance and reliability of machine learning (ML) models.
- Demonstrated the attacks in the [Subpopulation Data Poisoning Attacks](#) paper to understand the impact of poisoning attacks on real-world machine learning models. [[Presentation](#) | [Code](#)]

Applied Cryptography

Independent Study Module, Ashoka University

Jan 2021 – May 2021

Sonipat, India

- Mentor: [Prof. Mahavir Jhawar](#)
- Examined and evaluated the security vulnerabilities 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, primarily focusing 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](#)]

India's CSR Data Synchronization

September 2021

- Mentor: Shaivya Verma
- Analyzed India's CSR Data of the last five years using *Pandas* to observe the expenditure trends by various Indian companies as part of the Hack & Learn Summit 2021, Government Outcome Labs, University of Oxford.
- Presented our findings at the Social Outcome Conference 2021 (SOC21). [[Presentation](#)]

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 techniques for the 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
Modeling TensorFlow, PyTorch, *scikit-learn*, NumPy
Other Tools AWS, Plotly & Dash, Linux, Selenium

Data Analysis R, SQL, MongoDB, Pandas, PySpark
Software Dev. Django, React JS, Vue JS, Git

TEACHING EXPERIENCE

Undergraduate Teaching Assistant

Multiple Semesters

[Computer Science Department](#), Ashoka University

Sonapat, 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 inquiries 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 Ashoka University	2018 – 2020

AWARDS & SCHOLARSHIPS

Bronze Medal CS Awards, Ashoka University	2022
Silver Medal CS Awards, Ashoka University	2021
Dean's List Ashoka University	All 8 Semesters
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