

# Jagpreet Jakhar

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## EDUCATION

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### University of Sheffield

*M.Sc. Cybersecurity and Artificial Intelligence* **Distinction**

Sheffield, UK

2022 – 2023

### Maharshi Dayanand University

*B.Tech. Computer Science*

Rohtak, India

2011 – 2015

## PROJECTS

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### Football Match Analysis Using Computer Vision | *Python, PyTorch, Opencv*

Dec 2024 – Jan 2025

- This project analyses football matches using advanced computer vision techniques, including:
- YOLO for object detection (players, ball, referees).
- ByteTrack for tracking movements.
- KMeans and SigLip for team classification.
- [Link to Repository](#)

### Neural ODEs for Domain Wall Analysis | *Python, PyTorch, PySpark, HPC*

Jan 2023 – Sept 2023

- The study focuses on three distinct physical systems: the double pendulum, the Lorenz attractor, and the magnetic domain wall problem.
- The objective is to investigate and compare the predictive performance of Recurrent Neural Networks (RNNs), Long Short-Term Memory networks (LSTMs), and Neural ODEs.
- [Link to Repository](#)

## EXPERIENCE

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### Graduate Teaching Assistant - Big Data Analytics

Jan 2024 – Aug 2024

*University of Sheffield*

*Sheffield, UK*

- Supporting students in understanding modern scale-out system architectures for processing large, structured and unstructured datasets, how to scale resources for data processing based on workload requirements.
- Provided hands-on support for students working with AWS SageMaker, Athena, and Databricks to perform data analytics queries and implement data mining algorithms at scale.

### Graduate Teaching Assistant - Database Design

Jan 2024 – Jul 2024

*University of Sheffield*

*Sheffield, UK*

- Helping students understand the fundamentals of database management, relational database design, and advanced topics like data warehouses.
- Guided students through the process of designing and implementing relational databases, common challenges related to large and heterogeneous datasets, such as transactional and geo-spatial data.

### Graduate Teaching Assistant - Data Modelling and Storage

Sep 2023 – Jan 2024

*University of Sheffield*

*Sheffield, UK*

- Supported teaching by preparing presentations on topics such as Database Normalisation, providing technical assistance to students during sessions on SQLite and Python integration, and addressing any questions.

### Software Engineer

Sep 2015 – Aug 2019

*Swig Solutions*

*Gurgaon, Haryana*

- Spearheaded the development of a Kiosk Information Management System, increasing operational efficiency and reducing manual inquiries by 40%.
- Developed and deployed responsive, user-centric dynamic web applications using HTML, CSS, and JavaScript and React, enhancing client satisfaction and retention.
- Conducted comprehensive code reviews and implemented rigorous testing protocols, reducing post-deployment defects by 25%.

### Research Assistant

Sep 2014 – Dec 2014

*Maharshi Dayanand University*

*Rohtak, India*

- Facial Recognition Neural Networks Project using Convolutional Neural Networks by using Python, dlib (Machine Learning library), NumPy, and OpenCV library.

## TECHNICAL SKILLS

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**Languages:** Python, JavaScript, SQL

**Technologies:** AWS, Git, Docker, Terraform

**Libraries:** PyTorch, JAX, React.js, Tailwind, Next.js, Django, Flask