

# Aaryan Kumar

Janta Colony West Delhi-110027

+91 8491013159

Email: aa23beccs01@cujammu.ac.in

## Summary

Passionate about Cybersecurity and Artificial Intelligence, I enjoy solving real-world problems through innovative technology. From developing an Insider Threat Detection AI/ML model, a Document and PDF Tampering Detection model, a Network-based Intrusion Detection System, and other AI or Cybersecurity-based projects, I thrive on turning ideas into impactful solutions. With a strong foundation in cybersecurity, machine learning, Python, and deep learning frameworks, I aim to contribute to research and applications that make a meaningful difference.

## Skills

- Cybersecurity:** Nmap, Wireshark, Burp Suite, Metasploit, Kali Linux, Python Scripting, Bash Scripting
- Programming Languages:** Python, C, C++, JavaScript, SQL, MATLAB
- Machine Learning & Deep Learning:** TensorFlow, Keras, Scikit-learn, OpenCV, PyTorch, MediaPipe, Matplotlib, Joblib
- Web Development:** Flask, Django, HTML, CSS, JavaScript
- Tools & Platforms:** Git, Linux, Arduino, Raspberry Pi, MS Word, MS Excel, Power BI, PyPDF
- Soft Skills:** Team Collaboration, Report Writing, Effective Communication, Project Management, Data Analysis

## Experience

### Central University of Jammu (Collaboration with DRDO) – Jammu, IN

June 2024 – July 2024

- Developed an Intrusion Detection System using an AI/ML-based approach.
- Implemented a real-time network intrusion detection system using Wireshark and ML models (K-Means, Regression, Random Forest, Decision Tree, Support Vector Machine).
- Created datasets using NSL-KDD and NSL-CUP 99 with Excel.
- Designed a Flask-based ML application to determine packet characteristics based on specific features.
- Documented system architecture and scalability plans for potential urban deployment.

### Vulnerability Assessments and Penetration Testing (VAPT) Intern

Synthoquest Private Limited – Hybrid

May 13, 2025 – Ongoing

- Developed security-based applications.
- Conducted vulnerability assessments and penetration testing.
- Designed and executed cybersecurity awareness sessions.

### Artificial Intelligence Intern

Edunet (Collaboration with Microsoft and AICTE) – Online

April 10, 2025 – May 10, 2025

- Gained hands-on experience in AI model development, training, and optimization.
- Worked on image classification, predictive analytics, and model fine-tuning using TensorFlow and Scikit-learn.
- Contributed to AI-based projects involving data preprocessing, feature engineering, and deep learning techniques.

### Cloud Computing Intern

Edunet (Collaboration with Microsoft and AICTE) – Online

May 10, 2025 – Ongoing

- Gained hands-on experience in cloud-based application development.
- Worked on Google Cloud and Microsoft Azure.
- Contributed to AI-based projects involving data preprocessing, feature engineering, deep learning techniques, and cloud-based platforms..

## Education

11/2023 to 08/2027

CENTRAL UNIVERSITY OF JAMMU

BTECH CSE

Current Semester: 4<sup>th</sup>

CGPA: 9

2020-21

CENTRAL BOARD OF SECONDARY EDUCATION – sarvodaya bal vidyalaya ashok nagar

12th

Percentage: 80%

2018-19

CENTRAL BOARD OF SECONDARY EDUCATION – Govt. Boys.Ser.Sec High School Rajouri

10th

Percentage: 75%

## Projects

### 1. Intelligent Crash Detection and Emergency Notification

- Description:** I Implemented a deep learning-based system to detect vehicle accidents in real-time and send emergency alerts with GPS location data.
- Technologies:** Python, Deep Learning, VGG16, GPS Integration

2. [Network Based Intrusion Detection System](#)

- **Description:** Created a real-time Intrusion Detection System that analyzes captured packet behavior and predicts whether a packet is safe using an ML-based model. Integrated with a Flask-based web interface.
- **Technologies:** Python, Convolutional Neural Networks, TensorFlow, Flask ,Wireshark , Excel

3. [ISL words to text using CNN](#)

- **Description:** Developed a deep learning model to recognize Indian Sign Language (ISL) words and convert them into text, enhancing communication accessibility for the hearing impaired.
- **Technologies:** Python, Convolutional Neural Networks, TensorFlow, OpenCV

4. [Document Tampering Detection Model Using machine learning](#)

- **Description:** Built a Flask-based ML model to detect tampering in PDF and DOC files using document structure, hashing, and content features.
- **Technologies:** Python, Machine Learning, Flask, HTML, CSS, JavaScript, python

5. [Insider Threat Detection Model Using machine learning](#)

- **Description:** Designed a system to identify potential insider threats within an organization by analyzing user activity and network behavior. The model uses supervised learning techniques and behavioral pattern recognition to flag suspicious users.
  - **Technologies:** Python, Machine Learning, Excel , scikit-learn, wireshark
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**Certifications**

- HTML, CSS, JavaScript, React – Online Certification Course, Udemy – UC-8e5a8493-759e-4fdf-ad83-e3fb45200054
  - Artificial Intelligence Internship ID – Internship\_174175788467d11dbc1d08d
  - Geodata Processing Using Python By ISRO - 202433989197
  - CUJ Internship (Collab with DRDO) – CUJ/BE/2024/816
  - Computer Course Training By CSC – CSC3564059961
  - Syntho-Quest job offer letter – CIN NO – SYQ-INT-2025-CS-140
  - Introduction to Artificial Intelligence – By Infosys Springboard
  - Quantum Computing – BY Centre for Development of Advanced Computing
  - Finalist Certificate at HACKIITK Hackathon
  - Finalist Certificate at NHAH Hackathon
  - Finalist Certificate at SIH Hackathon
  - Participation Certificate at IIT JAMMU Hackathon
  - Participation Certificate at IIT Delhi Space Hackathon
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**Extracurricular Activities**

- Conducted Django Workshop at Central University of Jammu — Delivered hands-on training on web development using Django to fellow students.
- Finalist at HACKIITK Hackathon organized by IIT Kanpur — Developed an innovative cybersecurity solution under time constraints.
- Participant in NHAH Hackathon — Contributed to smart infrastructure solutions in a national-level coding event.
- Participant in Smart India Hackathon (SIH) — Collaborated with a team to solve real-world government problems through tech innovation.
- Participant in Generative AI Hackathon hosted by IIT Jammu — Worked on AI-based generative models and applications.
- Participant in IIT Surat Hackathon — Built a prototype addressing real-life societal issues using AI/ML **tools**.