

# Prem Kumar

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[GitHub](#) — [LinkedIn](#) — [Portfolio](#)

## Education

Indian Institute of Technology Jodhpur

Jodhpur, India

B.Tech in Artificial Intelligence and Data Science

Oct 2022 – Expected May 2026

GPA: 8.52 / 10 — Relevant Coursework: Data Structures, Algorithms, ML, AI, OS, CN, Probability

Kendriya Vidyalaya Mokamaghat

Class XII (CBSE): 92.4%

2022

Class X (CBSE): 91.6%

2020

## Experience

Software Engineering Intern

Expected May 2025 – Jun 2025

Citadel New York, NY, USA (Remote)

- Built a high-frequency trading simulator in Python processing **100K+ trades/sec** with **5ms latency**, enabling realistic backtesting for algorithmic strategies.
- Led a 4-member team to optimize data ingestion pipelines using **Kafka and Redis**, reducing data lag by **35%** and improving real-time analytics reliability.
- Automated CI/CD workflows using **GitHub Actions and Docker**, increasing deployment reliability by **40%** and reducing manual errors.

## Projects

Smart-Grading-App

Aug 2024 – Nov 2024

Guided by Dr. Binod Kumar

[GitHub](#) [Live Demo](#)

- Developed an automated grading tool for faculty, processing 150+ student records with modular rubrics, cutting manual grading time by **50%**.
- Designed a Tkinter GUI with Excel I/O integration, enabling seamless import/export and improving usability for non-technical users.
- Visualized performance trends using **Pandas and Matplotlib**, helping educators identify class-wide learning gaps.
- Maintained **85% unit test coverage**, resolving 12+ integration bugs before release.

Packet Analyzer Dashboard

Mar 2024 – Apr 2024

Guided by Dr. Sumit Kalra

[GitHub](#)

- Created a real-time network monitoring dashboard using **Dash**, visualizing 500 packets/sec with **92% anomaly detection accuracy**.
- Reduced false positives in intrusion alerts by **20%** using heuristic filtering and optimized packet parsing algorithms.
- Improved throughput by **25%** via concurrency and algorithmic optimization, enabling scalable analysis for large networks.

Language Learning Bot

Nov 2023 – Dec 2023

Independent Project

[Live Demo](#)

- Built an NLP-powered chatbot using **seq2seq RNN models (TensorFlow)** for real-time translation across Spanish, French, Japanese, and Hindi.
- Deployed a **Flask backend** handling 500+ daily queries with **200ms latency**, ensuring responsive user experience.
- Designed a clean frontend that improved user engagement by **40%**, ideal for language learners and travelers.

## Technical Skills

Languages: Python, C++, Java, JavaScript, SQL

Web: React, HTML, CSS, JavaScript, Flask, Dash

AI/ML: TensorFlow, Keras, Scikit-learn, NLP, Pandas, NumPy

Tools & Platforms: Git, GitHub Actions, Docker, Linux, Kafka, Redis

Concepts: Data Structures, Algorithms, OOP, CI/CD, Microservices, Unit Testing

## Certifications

- Deep Learning Specialization - Coursera (DeepLearning.AI)
- AWS Certified Cloud Practitioner