






SAJEEV SHYAM

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EDUCATION

Indian Institute of Technology Delhi

Dual Degree (B.Tech + M.Tech)

2021 – 2026

New Delhi, India

EXPERIENCE

Axtria - Ingenious Insights

Software Engineer Intern

May 2025 – July 2025

Noida, India

- Architected and deployed a full-stack automation testing platform using **React** and **Python-Flask** with REST API, reducing manual testing efforts by 40% and improving QA team productivity
- Engineered asynchronous backend using **Celery** and **Redis** for distributed task queue management, enabling parallel processing of 1000+ concurrent database validation jobs without timeouts
- Built responsive SPA with **React Router** and real-time data visualizations using **Chart.js**, providing interactive dashboards for test analytics and performance metrics
- Containerized application with **Docker** and orchestrated production deployment using **Nginx** reverse proxy and **Gunicorn** WSGI server, achieving 99.9% uptime

FidelFolio Investment Pvt Ltd

Quantitative Analyst Intern

May 2024 – July 2024

Remote

- Engineered predictive ML models using **PyTorch** and **Scikit-learn** for stock price forecasting, improving prediction accuracy by 50% through advanced feature engineering and ensemble methods
- Developed quantitative trading strategies generating 25% alpha on backtested portfolios with 7% RMSE across 500K+ historical data points using **pandas** and **NumPy**
- Built automated stock selection framework analyzing 21,000+ trading strategies using Python, creating optimized portfolios achieving 10% alpha through systematic backtesting and risk analysis

PROJECTS

Advanced Node.js Load Balancer | **Node.js, Express.js, Socket.IO, Axios**

Nov 2024

- Implemented a configurable load balancer in **Node.js** supporting multiple algorithms (Round Robin, Weighted RR, Least Connections, Weighted Least Connections) and path-based routing
- Built an automatic health check system for server failover/recovery and a real-time monitoring dashboard using **Socket.IO** to visualize server status, request counts, and error rates
- Engineered a cookie-based **sticky session** manager to ensure session persistence, fully configurable via a central **JSON** file alongside all routing rules

Realtime Collaborative Code Editor | **React, Node.js, Socket.IO, CodeMirror**

Dec 2024

- Developed a collaborative editor with **React** (using Recoil for state) and **Node.js/Express.js** backend, enabling real-time code synchronization for multiple users via **Socket.IO**
- Implemented multi-user collaboration with live cursors, syntax highlighting, and theme customization using the **CodeMirror** editor library
- Engineered a room-based file management system (create, delete, rename) with file content stored as the source of truth on the server's in-memory state

Kubernetes Cluster Autoscaler | **Python, Kubernetes, Prometheus, Grafana**

Jan 2025

- Built intelligent autoscaling system using **Kubernetes** API and **Python** that dynamically scales pods based on custom metrics from **Prometheus**, reducing infrastructure costs by 35% while maintaining SLA
- Implemented predictive scaling algorithms using time-series analysis to anticipate traffic spikes, achieving 60% faster scale-up response compared to reactive scaling
- Created comprehensive monitoring dashboards with **Grafana** for cluster resource utilization, cost tracking, and performance metrics

Resume Keyword Highlighter | **Python, Flask, spaCy, sentence-transformers, PyMuPDF**

Apr 2024

- Built a semantic parser using a weighted ensemble of three models (**spaCy, all-MiniLM, multilingual-MiniLM**) to score resume sections
- Implemented cosine similarity scoring with a three-tier color-coded highlighting system (very relevant, relevant, mildly relevant) using **PyMuPDF**

- Developed a **Flask** web app featuring a **transformer-based chatbot** for question-answering about the resume content

Image Caption Generation using Deep Learning | *Python, TensorFlow, VGG16, LSTM, Streamlit*

June 2025

- Architected an Encoder-Decoder model with an attention mechanism, using pretrained **VGG16** (or **MobileNetV2** for efficiency) for image feature extraction and an **LSTM** network for caption generation
- Trained the captioning model on the **Flickr8k dataset** and built a text preprocessing pipeline for caption tokenization
- Developed and deployed an interactive web application for live caption generation using **Streamlit**

AI Powered SQL Query Generator | *Python, FastAPI, Streamlit, Google Gemini, MySQL*

Jan 2026

- Architected a full-stack AI agent using **FastAPI** (backend) and **Streamlit** (frontend) that converts natural language into executable SQL queries for **MySQL** databases with real-time result visualization
- Implemented a **RAG-based schema injection** system using **Google Gemini 2.5 Pro** to dynamically fetch and feed database metadata to the LLM, ensuring 100% hallucination-free query generation
- Engineered a robust backend with custom **rate limiting** middleware and connection pooling via **SQLAlchemy**, ensuring efficient resource usage and secure environment management

TECHNICAL SKILLS

Languages: Python, C++, C, Java, JavaScript (ES6+), Go, SQL, Bash

Web & Backend: React, Node.js, Express.js, Flask, REST APIs, Socket.IO, WebRTC, gRPC, GraphQL

ML & AI: PyTorch, TensorFlow, Keras, Scikit-learn, Transformers, NumPy, Pandas, SciPy, NLTK

Databases & Caching: MongoDB, MySQL, PostgreSQL, Redis, RocksDB, Elasticsearch

DevOps & Cloud: Docker, Kubernetes, Git/GitHub, CI/CD, Nginx, AWS, Prometheus, Grafana, Linux

Core CS: Data Structures, Algorithms, System Design, Distributed Systems, Operating Systems, Networks

ACHIEVEMENTS & COMPETITIONS

JEE Advanced 2021: Secured All India Rank **1729** among 150,000+ candidates | Top 1.2% nationwide

JEE Mains 2021: Secured All India Rank **2413** among 1,000,000+ candidates | Top 0.25% nationwide

HBCSE Olympiads 2018: Qualified for 2nd level of Indian National Junior Science Olympiad (INJSO) and Indian National Astronomy Olympiad (INAO) by securing 2nd rank in Uttarakhand State

Codeforces Expert: Achieved Expert rating (1600+) competing against global programmers in algorithmic contests

Eightfold AI Innov8 Challenge 2024: Developed resume keyword highlighter using ensemble of LLMs; recognized for innovative application of transformer models in recruitment technology

BCG Bruce Henderson Insight Ideathon 2024: Ranked **3rd among 300+ IIT Delhi students** after clearing online case assessment; presented strategic market entry analysis for multi-sport facility with comprehensive competitor analysis

LEADERSHIP & EXTRACURRICULAR ACTIVITIES

Team Head, Tryst 2022 (Technical Fest) | *CAIC, IIT Delhi*

July 2021 – May 2022

- Led team of 3 members to drive sponsor visibility and increase fest participation through strategic marketing initiatives
- Coordinated with multiple stakeholders to organize technical competitions and workshops attracting 5,000+ participants

Activity Head, Literati (Literary Fest) | *Board for Student Welfare, IIT Delhi*

June 2023 – May 2024

- Managed team of 10+ students in organizing annual literary festival with 2,000+ participants and 500K+ budget
- Optimized resource allocation and inventory management, reducing operational costs by 20% while improving event quality
- Curated diverse event lineup including poetry slams, debates, and author interactions, achieving 95% participant satisfaction

Core Team Member (Creative), Rendezvous 2023 | *BRCA, IIT Delhi*

June 2023 – May 2024

- Developed official cultural festival website using **React** and **Node.js**, handling 10,000+ concurrent users during peak fest days with zero downtime
- Managed 3-tiered development team of 60+ members, coordinating between design, frontend, and backend teams to deliver responsive, mobile-first web application