

# AKASH KUMAR SINGH

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## EDUCATION

IIIT Manipur	B.Tech, Computer Science and Engineering	8.23/10	2022 - 2026
PGSS School, Kushinagar	Class XII (CBSE)	95.4%	2019 - 2021
JNV, Kushinagar	Class X (CBSE)	97.4%	2014 - 2019

## EXPERIENCE

- Software Developer Intern** Truxie (Prayas Logistics) 05/2025 - 12/2025
  - Developed backend services using **NestJS**, **TypeScript**, and **PostgreSQL**, handling transactions with concurrency control and pipeline-based data processing architecture.
  - Designed and implemented **payment and payout services**, incorporating **idempotency keys**, **retry logic**, and duplicate request detection to ensure reliable and consistent transactions.
  - Implemented **API rate limiting** via middleware and request throttling to safeguard services against abuse and maintain performance under high traffic.
  - Wrote comprehensive **Jest unit and e2e tests**, and designed **50+ REST APIs** following clean architecture patterns in an **Agile** environment.

## SKILLS

<b>Languages:</b>	JavaScript, TypeScript, Python, C/C++
<b>Frameworks &amp; Libraries:</b>	Node.js, Express, NestJS, Jest, React, FastAPI, PyTorch, Numpy, Pandas
<b>Databases:</b>	PostgreSQL, MongoDB, MySQL, Supabase
<b>Cloud &amp; DevOps:</b>	Docker, AWS, CI/CD, Git, GitHub
<b>Core Concepts:</b>	OOPS, Operating Systems, DBMS, Computer Networks, Linux

## PROJECTS

- NeuroSonic Audio CNN** *PyTorch, NumPy, Pandas, FastAPI, Docker, Python* [GitHub](#)
  - Developed an environmental sound classifier using a **ResNet-based CNN** on ESC-50 dataset (2,000 samples, 50 classes), achieving **80-85% accuracy**.
  - Enhanced model performance by **15%** through data augmentation with **mel-spectrogram transformations**, pitch shifting, time stretching, and mixup regularization.
- Semantic Book Recommender** *Python, Hugging Face, LangChain, ChromaDB, Transformers* [GitHub](#)
  - Created a recommendation system with **sentence-transformer embeddings** for semantic search, **zero-shot classification** for genres, and **sentiment analysis** across 7,000+ books.
  - Integrated **ChromaDB vector database** for fast similarity search with preprocessing pipeline for text cleaning, tokenization, and normalization using **Pandas** and **NumPy**.
- SwiftChat** *MongoDB, Express, React, Node.js, Socket.IO, PeerJS, Zustand* [View](#) [GitHub](#)
  - Designed a real-time chat platform with **Socket.IO messaging**, group spaces, **WebRTC video calling**, and shared video rooms with independent playback controls.
  - Added **presence tracking**, automatic video cleanup, and state management with **Zustand** for handling user interactions and UI updates.

## ACHIEVEMENTS

- Achieved 1631 LeetCode rating by solving 500+ DSA problems across LeetCode and GFG.
- Contributed 300+ commits on GitHub, strengthening backend systems and applying version control best practices.