

# Pranshu Tripathi

## Software Engineer

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### SUMMARY

Software Development Engineer with 2+ years of experience across full-stack development, system design, and AI integrations. Proven expertise in C++, Python, FastAPI, and Kubernetes, with deep knowledge of design patterns, CI/CD, and microservices. Recognized by executive leadership for architecting the LLM-based Maestro Assistant and leading the development team to drive the project from prototype to global launch. Delivered a 300-400x performance boost in molecular calculations using a custom C++ library. Actively seeking challenging SDE roles to build scalable, high-performance systems in cutting-edge tech environments.

### EXPERIENCE

#### Schrödinger

##### Senior Developer I

January 2026 - Present

- Project lead of Maestro Assistant.
- Developed a Semantic Panel Search prototype using vector embeddings to replace legacy algorithmic search, successfully validating the architecture for production deployment
- Collaborating on architecture design of Notification and Authentication services for Maestro.

##### Developer II

July 2024 - December 2025

- Engineered the "Maestro Assistant" service into a single proxy, implementing CI/CD pipelines and telemetry to support 100+ daily production requests. Received recognition from company leadership and customers like BMS, GSK.
- Implemented non-bonded interaction calculation library; a modular C++ library with caching. It reduced the calculation time by 300-400x; cut 10-min tasks to 30s.
- Mentored an engineering intern on the Project Table Calculator, implementing daily code reviews and enforcing scalable design patterns to ensure the successful delivery of major project components.

##### Developer I

June 2023 - June 2024

- Refactored 2000+ lines of legacy code using Factory and Strategy patterns, improving extensibility for handling diverse Job Server outputs.
- Enhanced export functionality for new movie presets (e.g., View Ligand Docking) from Maestro to PyMOL, decreasing manual visualization setup time by 60% and enhancing automated workflow efficiency.

##### Intern - Software Development

January 2023 - May 2023

- Created an adapter for Schrödinger's structure class that removed the m2io dependency and enabled a property-writing mechanism with 3x greater flexibility, gaining recognition from Scientific Infrastructure team.
- Implemented a robust Find Toolbar widget following MVC pattern and command pattern with python and C++ inter communication.

##### Intern - Software Development

May 2022 - July 2022

- Delivered a robust preset management feature in 2 months—30% faster than average—using Factory and Adapter design patterns.

### PROJECTS

#### EventHive



Deployed a ticketing platform on GKE handling 3,000+ RPS, publishing NPM packages to streamline microservice integration across 5 services

#### PlotCortex



A place to semantically search movies and TV shows in IMDB movies dataset

#### CarbonHero



Built a leaderboard-based Flutter app for GDSC Solution Challenge 2021 to track user carbon footprint, integrating Firebase for real-time updates and auth

### EDUCATION

#### IIIT Allahabad (B.Tech)

##### Electronics and Communication

Aug 2019 - May 2023

- **GPA:** 9.16/10
- **Batch Rank:** 4
- **Award:** Merit-cum-Means Scholarship for Academic Excellence 2020, 2021, 2022

### AWARDS

- Runner-up in Schrödinger Hackathon 2024
- Appreciation from CEO, CTO for Maestro Assistant Project
- Silver Medal - Football, Badminton & Table Tennis at Schrödinger Sports Meet

### SKILLS

#### Programming Languages

- C++, Python, Java, JavaScript, TypeScript, SQL, Shell Scripting, Terraform

#### Framework & Libraries

- Spring, Express.js, React, Next.js, Qt, Hibernate, PostgreSQL, SIP (Python-C++), PyQt6, BULLJS

#### Cloud & DevOps

- Docker, Kubernetes (K8s), GitHub Workflows, Travis CI, AWS (Elastic Beanstalk, RDS, ElastiCache), GCP, GKE, G Cloud SQL, NATs Streaming

#### Generative AI Technologies

- LiteLLM, Vertex AI, Hugging Face, Qdrant Vector DB, LangChain, DSPY, MCP, RAG

#### Additional Interests

- CNNs, LSTMs, Transformers, Graph DB, IoT Systems, Classification Models, Speech to Text recognition

### VOLUNTEERING

- Coordinator - IoT Wing, IIIT Allahabad
- Senior Member - Literature Society, IIIT Allahabad

### LANGUAGES

English, Hindi, Marathi, German