

Prashant Dubey

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EXPERIENCE

- **Chandigarh University, Lucknow (CU-LKO)** Lucknow, India
Jan 2026 – Present
 - **Full Stack Engineer**
 - **CMS Architecture:** Designed and implemented scalable CMS architectures using **Next.js** for managing **12+** dynamic content sections with complex relational data models.
 - **Knowledge Systems:** Built graph-based knowledge systems using **Neo4j** to model **20,000+** publications, patents and institutional research relationships enabling efficient knowledge discovery and visualization.
 - **Frontend Engineering:** Engineered interactive frontend experiences using **React**, **Next.js** and **Canvas**-based visualizations supporting graphs comprising **3000+** interconnected nodes.
 - **Caching Strategies:** Designed and implemented **Redis**-backed caching strategies improving application responsiveness and efficient data retrieval workflows across large-scale datasets.
 - **Cloud Architecture:** Architected and deployed cloud-native applications on **AWS** leveraging **S3** and **CloudFront** for scalable asset delivery across multiple university platforms.
- **Notely** Remote
Sept 2025 – Nov 2025
 - **Full Stack Product Engineer**
 - **Cross Platform Development:** Built cross-platform desktop application infrastructure using **Electron.js** supporting **Windows**, **macOS** and **Linux** environments.
 - **Microservices Architecture:** Designed and developed scalable **microservices-based architectures** enabling modular feature development, seamless service communication and maintainable product evolution.
 - **IPC Architecture:** Designed secure **IPC**-based communication and persistent state management mechanisms for synchronization between renderer and background processes.
 - **Collaborative Systems:** Implemented collaborative editing workflows and synchronization mechanisms supporting real-time interactions and offline-first capabilities across application modules.
 - **Performance Optimization:** Optimized application architecture, component rendering and state management strategies to significantly improve UI responsiveness and startup performance across platforms.

PROJECTS

- **Terrek** [Source Code](#) | Rust CLI Tool (ISO)
2026
 - **Tech Stack:** Rust, TUI, AI Systems, CLI Engineering
 - **AI Integration:** Designed and developed a terminal-native workflow engine integrating **4+** AI providers including **OpenAI**, **Gemini**, **Claude** and **Ollama** through a pluggable abstraction layer.
 - **Terminal Interface:** Built an interactive terminal user interface (**TUI**) supporting intelligent command execution, workflow orchestration and developer tooling within a unified environment.
 - **Modular Architecture:** Architected a modular system separating command processing, AI integrations, configuration management and terminal interfaces for extensibility and maintainability.
 - **BYOK Support:** Implemented Bring Your Own Key (**BYOK**) architecture supporting automatic provider detection and secure local API key management across multiple AI providers.
- **ChainTrace** [Source Code](#) | [Live Dashboard](#)
2026
 - **Tech Stack:** Bun, TypeScript, HydraDB, OpenCypher, Next.js
 - **Software Supply Chain Graph:** Built a graph-based security platform modeling **npm** and **PyPI** packages, versions and dependency relationships using **HydraDB** and **OpenCypher**.
 - **Blast Radius Analysis:** Implemented dependency traversal and **blast-radius analysis** to identify downstream applications and packages affected by compromised or vulnerable dependencies.
 - **Attack Path Detection:** Developed graph-based security analysis for identifying **attack paths**, **typosquats** and **compromised lockfile dependencies** across transitive dependency chains.
 - **Dependency Resolution:** Engineered a semantic-version-aware dependency resolver and ingestion pipeline to construct and maintain package dependency graphs from real-world project lockfiles.
 - **Security Dashboard:** Built an interactive **Next.js** dashboard exposing dependency graphs, risk analysis and blast-radius results through a full-stack **Bun + TypeScript** backend.

TECHNICAL SKILLS

- **Languages:** C++, Rust, Python, JavaScript, TypeScript, Go
- **Frameworks and Libraries:** React.js, Next.js, Express.js, Prisma (ORM), TailwindCSS, Three.js, Electron.js, GSAP
- **Databases:** PostgreSQL, MySQL, SQLite, MongoDB, NeonDB, Redis, Neo4j, ChromaDB
- **Backend and Systems:** Node.js, gRPC, REST APIs, WebSockets, WebRTC, Microservices, Event-Driven Architecture, RPC Systems
- **AI/ML and Agents:** OpenAI API, LLM Fine-Tuning, Agent Orchestration, RL Frameworks, Semantic Search, RAG Systems, AI SDKs
- **Cloud and DevOps:** AWS, Docker, Kubernetes, CloudFront, S3, GitHub Actions, Nginx, PM2, Cloudflare
- **Monitoring and CI/CD:** Prometheus, Grafana, New Relic, PostHog, Jenkins
- **Developer Tools and Technologies:** Git, Linux, Playwright, Cheerio, Bun, Tauri, Canvas APIs

ACHIEVEMENTS

- Solved **1000+** algorithmic problems across LeetCode, Codeforces, CodeChef and GeeksforGeeks.
- Codeforces Expert (**Max Rating: 1628**) and CodeChef **4** (**Max Rating: 1860**).
- Won **5** National and International Hackathons including NASA Space Apps Challenge (Mohali Chapter) and DTU Cryptic Hunt.
- Built award-winning solutions across Software Engineering, AI and Systems Design competitions.

EDUCATION

- **Chandigarh University** Mohali, Punjab, India
June 2026
 - **Bachelor of Engineering (B.E.)**
CGPA: 8.6/10