

Satadeep Dasgupta

Solution Architect & Full-Stack Developer

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Links: [GitHub](#) | [LinkedIn](#)

Professional Summary

Dynamic Full-Stack Developer with 5+ years of comprehensive experience in designing, developing, and managing complex web applications and solutions. Currently serving as Solution Architect at Brainium Information Technologies, leading architectural decisions and complex system design. Skilled in leveraging a wide range of programming languages and frameworks including React, Node.js, Rust, and C++ to create scalable and efficient software. Published researcher with expertise in AI/ML systems and hybrid database architectures.

Experience

Solution Architect | Brainium Information Technologies Pvt Ltd

June 2024 - Present

Solution Architect (January 2025 - Present)

- Leading architectural decisions and complex system design for enterprise-level solutions
- Creating comprehensive cloud and application architecture for scalable, robust systems
- Developing AI applications and intelligent solutions to enhance business processes
- Designing and implementing microservices architecture and cloud-native solutions

Associate Software Engineer (June 2024 - January 2025)

- Analyzed and developed solutions for challenging technical problems and business requirements
- Handled complex parts of enterprise-level software solutions and system integrations

Full Stack Developer | IGLOBAL IMPACTS ITES PVT LTD

June 2022 - June 2024

- Spearheaded development and maintenance of scalable web applications with robust backend functionality
- Managed full deployment pipelines, overseeing CI/CD processes to streamline development cycles
- Participated in recruitment process, interviewing candidates and assessing technical skills
- Collaborated with cross-functional teams to define project requirements and ensure timely delivery
- Implemented best practices in code versioning, testing, and quality assurance

Freelancing Developer | Fiverr.com

August 2019 - June 2022

- Developed and delivered full-stack web solutions to diverse client base across various platforms
- Managed end-to-end website development projects from requirement gathering to deployment
- Collaborated effectively with clients to define project scopes and timelines
- Implemented responsive web designs using HTML, CSS, JavaScript, and modern frameworks
- Troubleshoot and resolved bugs and performance issues, optimizing for maximum speed and scalability

Technical Skills

Programming Languages

JavaScript, TypeScript, Python, Rust, C++, Java, HTML, CSS

Frontend Technologies

React.js, Next.js, Vue.js, Angular, Flutter, React Native, Tailwind CSS

Backend Technologies

Node.js, Express.js, Django, AdonisJS, RESTful APIs, GraphQL

Databases & Data

PostgreSQL, MySQL, MongoDB, SQLite, SurrealDB, Redis

Cloud & DevOps

AWS (EC2, CloudFront), Azure, Docker, CI/CD Pipelines, Jenkins, GitHub Actions

Mobile Development

Flutter, React Native, Tauri (Desktop Apps)

Other Technologies

Git, CMake, WebSockets, Microservices Architecture, System Programming

Languages

English (Fluent), Bengali (Native), Hindi (Fluent)

Projects

IP Blocker | *September 2025*

Network security tool for IP address blocking and traffic management

- **Technologies:** Network Security, System Administration, Traffic Management
- **GitHub:** [satadeep3927/ipblocker](#)

Data2BI Server | *July 2025*

Conversational BI Dashboard Agent for intelligent data analytics and insights

- **Technologies:** Business Intelligence, Conversational AI, Data Analytics, Machine Learning
- **GitHub:** [satadeep3927/data2bi-server](#)

CogniBase | *June 2025*

Intelligent knowledge base system with advanced cognitive capabilities

- **Technologies:** AI/ML, Knowledge Management, Natural Language Processing
- **GitHub:** [satadeep3927/cognibase](#)

OxideDB | *May 2025*

High-performance database system built with modern architecture

- **Technologies:** Rust, Database, Systems Programming, Performance Optimization
- **GitHub:** [satadeep3927/oxidedb](#)

Tunez (Open Source) | *January 2024*

Free music streaming app with personalized recommendations and offline mode

- **Technologies:** Flutter, Node.js, TypeScript, Heroku
- **Features:** Music discovery, playlist creation, personalized recommendations, offline mode
- **GitHub:** [satadeep/tunez](#)

DineSwift POS | *December 2023*

End-to-end restaurant Point of Sale solution

- **Technologies:** Tauri, Rust, TypeScript, React, SQLite, MySQL, AdonisJS
- **Features:** Real-time order updates, inventory management, sales reporting
- **Impact:** Streamlined operations from order taking to billing for restaurant clients

BeholderTech | *November 2023*

Sophisticated monitoring system for ATXFloods application infrastructure

- **Technologies:** Next.js, Node.js, Express.js, MySQL
- **Features:** Real-time analytics dashboards, alert systems, performance monitoring

AtlasFlow++ | *October 2023*

Robust C++ API wrapper for seamless Atlas DataAPI integration

- **Technologies:** C++, Git, CMake, API Development
- **Impact:** Enhanced data connectivity and manipulation capabilities

ATXFloods | *September 2023*

Critical web application for monitoring flood conditions across Texas State

- **Technologies:** Python, Django, PostgreSQL, React, AWS CloudFront, AWS EC2
- **Impact:** Real-time updates and alerts for public safety and disaster management

Research & Publications

"Bridging Analytics and Semantics: A Hybrid Database Approach to Retrieval-Augmented Generation"

Zenodo Repository | September 2025

Authors: Debashis Saha, Satadeep Dasgupta

DOI: [10.5281/zenodo.17018699](https://doi.org/10.5281/zenodo.17018699)

Source Code: [satadeep3927/hybridrag](https://github.com/satadeep3927/hybridrag)

Abstract: Novel hybrid database approach combining SurrealDB vector search with LLM reasoning through LangChain and tool execution. Demonstrated 18% improvement in relevance accuracy over vector-only baselines.

Keywords: Retrieval-Augmented Generation, Large Language Models, Hybrid Databases, SurrealDB, LangChain, Semantic Retrieval

Key Achievements

- **Published Research:** Co-authored peer-reviewed paper on AI/ML systems with practical implementation
- **Career Progression:** Advanced from Freelancer → Developer → Solution Architect in 5 years
- **Open Source Contributions:** Multiple active repositories with community engagement
- **Technical Leadership:** Led software releases improving performance by 40% and reducing load times by 30%
- **Process Optimization:** Overhauled deployment pipelines, cutting deployment times by 50% and reducing errors by 90%
- **Cross-Platform Expertise:** Successfully delivered web, mobile, desktop, and systems-level applications

Education

Bachelor of Science (Mathematics)

Brahmananda Keshab Chandra College

2019 - 2022
