

# Satadeep Dasgupta

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## Solution Architect & Full-Stack Developer

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

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## 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.

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## 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
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## 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)

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## Projects

### Loom-UI | February 2026

Monitoring and observability dashboard for Loom workflows

- **Technologies:** TypeScript, React, Dashboard, Monitoring, Observability
- **Features:** Workflow visualization, execution details, health monitoring, search & filtering

- **GitHub:** [satadeep3927/loom-ui](https://github.com/satadeep3927/loom-ui)

## **Loom** | *January 2026*

Durable workflow orchestration engine for long-running, reliable processes

- **Technologies:** Python, Workflow Engine, Event Sourcing, Distributed Systems
- **Features:** Durable workflows, event sourcing, deterministic execution, fault tolerance
- **GitHub:** [satadeep3927/loom](https://github.com/satadeep3927/loom)

## **IP Blocker** | *September 2025*

Network security tool for IP address blocking and traffic management

- **Technologies:** Network Security, System Administration, Traffic Management
- **GitHub:** [satadeep3927/ipblocker](https://github.com/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](https://github.com/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](https://github.com/satadeep3927/cognibase)

## **FrostUI CLI** | *June 2025*

Powerful CLI for installing and managing FrostUI React Native components

- **Technologies:** Node.js, TypeScript, CLI, React Native, Expo
- **Features:** GitLab authentication, component installation, theme system, auto-detection
- **GitHub:** [satadeep3927/frostui-cli](https://github.com/satadeep3927/frostui-cli)
- **NPM:** [frostui-cli](https://www.npmjs.com/package/frostui-cli)

## **OxideDB** | *May 2025*

High-performance database system built with modern architecture

- **Technologies:** Rust, Database, Systems Programming, Performance Optimization
- **GitHub:** [satadeep3927/oxidedb](https://github.com/satadeep3927/oxidedb)

## **Streammint Client** | *May 2025*

TypeScript frontend for real-time streaming and media management

- **Technologies:** TypeScript, React, Frontend, Streaming

- **Features:** Streaming UI, media management, API integration, real-time feedback
- **GitHub:** [satadeep3927/-streammint-client](https://github.com/satadeep3927/-streammint-client)

### **Streammint Server** | *May 2025*

Pluggable Rust backend for real-time chat and messaging

- **Technologies:** Rust, Backend, Real-time, Chat
- **Features:** Pluggable architecture, real-time messaging, scalable design
- **GitHub:** [satadeep3927/streammint-server](https://github.com/satadeep3927/streammint-server)

### **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](https://github.com/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

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## 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

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## 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
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## Education

### Bachelor of Science (Mathematics)

**Brahmananda Keshab Chandra College**

2019 - 2022

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## Certifications

*Add relevant professional certifications as applicable*