

# Dhairya Adroja

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LinkedIn — GitHub — Portfolio

## Summary

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- Backend-focused Computer Science student with expertise in server-side development, API design, and database optimization. Proven experience building scalable backend systems with 99.8% reliability. Passionate about creating robust, high-performance server architectures and microservices.

## Skills

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- **Backend Technologies:** Node.js, Python Flask, ASP.NET, Express.js, REST APIs, GraphQL, Microservices
- **Programming Languages:** Python, JavaScript, TypeScript, Java, C#, Rust, SQL
- **Databases:** MongoDB, PostgreSQL, MySQL, Redis, Database Design, Query Optimization
- **Server & Infrastructure:** Linux, Docker, Nginx, Load Balancing, Caching, Message Queues
- **API Development:** RESTful Services, WebSocket, Authentication (JWT, OAuth), Rate Limiting
- **Tools & Frameworks:** Git, Docker, CI/CD, Testing Frameworks, Performance Monitoring

## Projects

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- **Enterprise Chat Application Backend** — Node.js, MongoDB, WebSocket, JWT  
GitHub — *Real-time Communication Server*
  - Architected scalable backend API supporting 100+ concurrent users with 99.8% message delivery rate
  - Designed secure authentication system with JWT tokens, session management, and role-based access control
  - Implemented real-time WebSocket communication with connection pooling and automatic reconnection
  - Optimized database queries and implemented caching strategies reducing API response time by 40%
  - Built comprehensive admin APIs with user management, analytics, and automated spam detection
- **CodeTrade - High-Performance Data Processing API** — Python, Flask, PostgreSQL  
GitHub — *Financial Data Processing Backend*
  - Developed high-throughput API processing 50,000+ data points with 95% accuracy in pattern detection
  - Implemented efficient data pipeline handling 1000+ files per hour with parallel processing
  - Designed scalable architecture supporting 25+ concurrent API requests with load balancing
  - Optimized database operations using indexing and query optimization, improving performance by 60%
  - Built robust error handling and logging system ensuring 99.9% system reliability
- **Physics Simulation API Backend** — JavaScript, Node.js, WebGL Processing  
GitHub — *Real-time Physics Engine Server*
  - Created high-performance physics calculation engine processing 1000+ particles at 60 FPS
  - Implemented efficient collision detection algorithms with spatial optimization achieving 95% accuracy
  - Designed modular API architecture allowing dynamic physics behavior configuration
  - Optimized computational algorithms reducing server processing time by 40%
- **Aarambh - Learning Platform Backend** — Node.js, Express.js, MongoDB, JWT  
GitHub — *Final Year Project - Educational API Services*
  - Developing comprehensive REST API for learning management with course, user, and progress endpoints
  - Implementing secure authentication and authorization system with role-based access control
  - Building scalable database architecture with optimized queries supporting 500+ concurrent users
  - Creating real-time notification system and file upload services with automated content validation

## Experience

- Teaching Assistant - Object Oriented Programming (Java)** June 2025 – Dec 2025  
*Darshan University* *Rajkot, Gujarat*
  - Mentored 50+ students in Java backend development, API design patterns, and database integration
  - Conducted practical sessions on RESTful API development and server-side programming concepts
  - Developed backend coding exercises and project templates improving student understanding by 30%
  - Assisted in grading and code review processes, providing detailed feedback on backend implementations
- Backend Developer (Personal Projects)** 2023 – Present  
*Full-Stack Application Development* *Remote*
  - Developed and maintained backend services for multiple applications serving 100+ users
  - Implemented RESTful APIs with comprehensive documentation and automated testing
  - Optimized database performance and implemented caching strategies for improved response times
  - Designed secure authentication systems and implemented proper error handling and logging
- Open Source Backend Contributor** 2023 – Present  
*Various Projects* *GitHub Community*
  - Contributed to 5+ open-source backend projects, focusing on API optimization and security improvements
  - Implemented database optimizations and caching solutions across multiple repositories
  - Collaborated with global development teams on backend architecture and best practices

## Technical Expertise

- **API Design:** RESTful services, GraphQL, WebSocket real-time communication, API versioning
- **Database Management:** Schema design, query optimization, indexing, data modeling, migrations
- **Performance Optimization:** Caching strategies, load balancing, database tuning, code profiling
- **Security:** Authentication, authorization, input validation, SQL injection prevention, data encryption
- **Testing:** Unit testing, integration testing, API testing, performance testing

## Achievements

- \* 1st Place Winner - CodeTrade Hackathon: Built scalable backend processing 50K+ data points (July 2025)
- \* Multiicon Hackathon Winner - Secured internship opportunity through innovative backend architecture
- \* Chess Champion - 1st Place Team Event, Runner-up Individual Competition demonstrating strategic thinking
- \* Performance Expert: Achieved 40-60% improvement in API response times across projects
- \* Security Focus: Implemented secure authentication systems with zero security vulnerabilities

## Education

- Bachelor of Technology in Computer Science and Engineering** Expected May 2027  
*Darshan University, Rajkot, Gujarat* *CGPA: 8.1/10*
  - Relevant Coursework: Data Structures, Algorithms, Database Systems, Computer Networks, System Design
- Diploma in Computer Science and Engineering** May 2023  
*Kalyan Polytechnic, Jamnagar, Gujarat* *First Class with Distinction*
  - Foundation: Programming Fundamentals, Database Management, Web Technologies, System Analysis

## Languages

- **English:** Professional proficiency
- **Hindi:** Native proficiency
- **Gujarati:** Native proficiency