

# Dhritabrata Mitra

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## SKILLS

**Frontend:** Next.js, React.js, React Native, TypeScript, JavaScript (ES6+), Redux, Zustand, HTML5, CSS3, Tailwind CSS, Material UI, GraphQL (Apollo Client)

**Backend:** Java, Spring Boot, Spring MVC, Hibernate, Microservices, Kafka, Python, Node.js, Express, FastAPI, RESTful APIs, GraphQL APIs (Spring GraphQL, Apollo Server)

**Databases:** PostgreSQL (NeonDB, Drizzle ORM), MySQL (SQL), MongoDB (NoSQL), Redis

**Cloud/DevOps:** AWS (EC2, S3, CodeDeploy, CloudWatch), Docker, Kubernetes, Jenkins, CI/CD, Linux, Cloudinary

**Testing & Quality:** JUnit, Jest, React Testing Library, Selenium, Cypress, Playwright, Test-Driven Development (TDD)

**Tools:** Git, Maven, Webpack, Babel, Postman, Figma, Confluence, Bitbucket, GitHub, Jira, dotenv

**Security & Auth:** JWT, OAuth2 (GCP), Better Auth

**AI/Realtime:** OpenAI APIs, Stream Video/Chat SDKs, WebRTC, WebSockets (Socket.IO), TensorFlow, Keras

## WORK EXPERIENCE

### Cognizant Technology Solutions

Software Engineer

Sept 2020 – Jun 2023

#### Project: Capital One

- **Engineered secure, high-performance distributed banking systems** using React.js, Java (Spring Boot, Spring MVC, Microservices, Hibernate), Tailwind CSS, TypeScript, and PostgreSQL, serving **2M+** users and ensuring compliance with financial regulations.
- **Built a Redis-backed rate-limiting microservice** with JWT/OAuth2 authentication (10 req/min per user), preventing DoS and brute-force attacks, enhancing system reliability.
- **Deployed React.js, Node.js, and Java Spring Boot microservices** on AWS EC2 with AWS CodeDeploy, storing build artifacts in S3 and monitoring system health via CloudWatch, cutting release times by 50% and reducing deployment failures.
- **Implemented CI/CD pipelines** using Jenkins integrated with AWS CodeDeploy and IAM-based access controls, enabling secure, automated deployments of microservices that reduced manual errors by 30%.
- **Containerized Spring Boot microservices** using Docker and orchestrated them with Kubernetes, enabling independent deployments, automated scaling, and zero-downtime releases while reducing infrastructure costs by 20%.
- **Mentored 5 interns** and conducted peer code reviews, establishing coding standards and supporting 10+ successful production deployments.

#### Project: Walmart

- **Engineered a single-page e-commerce platform** using React.js, React Native, Java (Spring Boot, Microservices, Spring MVC, Hibernate), TypeScript, JQuery, and PostgreSQL, serving **3M+** monthly users and contributing to **\$15B+** in annual revenue.
- **Enhanced advanced filtering, sorting, and pagination features**, streamlining product discovery and contributing to a 10% lift in average session duration and a 20% increase in customer engagement on category pages.
- **Built and optimized RESTful and GraphQL APIs** to connect frontend and backend systems more efficiently, making data loading faster and reducing page errors.

- Resolved production and integration issues across frontend and backend systems by performing root cause analysis, **reducing downtime from 12 hours per quarter to under 30 minutes**, and **cutting average production incidents from 250 to 20 per month**.
- **Lowered production issues by 35%** by writing unit tests (Jest, React Testing Library, and JUnit), and performing end-to-end testing (Cypress, Playwright, Selenium) following Test-Driven Development (TDD) practices.
- **Reduced frontend load times by 35%** and boosted checkout conversions by 20% by implementing lazy loading and Webpack code splitting.

*Software Engineer Intern*

Jan 2020 – Apr 2020

- **Resolved 10+ critical bugs** and **developed 5+ new features** for Walmart's website, improving application performance and reducing crash rates within 4 months.
- **Collaborated with a 6-member Agile team** under SDLC processes, participating in daily stand-ups, sprint planning, and code reviews to deliver features ahead of schedule.

## TECHNICAL PROJECTS

### **Meet AI | Demo | Live Site | GitHub**

- **Built a SaaS platform with OpenAI LLM integration** for real-time verbal Q&A, providing training and eliminating delays in problem-solving by delivering instant, accurate answers during meetings.
- **Developed video conferencing features** (calls, screen sharing, recording) using Stream SDKs/WebRTC, enhancing productivity.
- **Architected a scalable backend** with tRPC, Drizzle ORM, and NeonDB, powering type-safe APIs, faster queries, and advanced search/filtering, improving navigation efficiency.
- **Designed a subscription-based payment system using a payment API (Polar API)**, enabling users to manage premium plans, track usage, and handle recurring payments.
- Tech Stack: Next.js, React.js, TypeScript, Tailwind CSS, Radix UI, Lucide React, React Hook Form, Zod, TanStack React Query, Embla Carousel, Sonner, tRPC, Drizzle ORM, NeonDB, dotenv, Better Auth, Stream Video/Chat SDKs, and OpenAI APIs.

### **ChatAway - Real-time Chat App | Demo | Live Site | GitHub**

- **Built a real-time chat app** (Socket.IO/WebSockets), addressing delays in teamwork by providing immediate messaging and media sharing.
- **Implemented secure authentication** with OAuth2 (GCP) and JWT, protecting sensitive features and improving trust.
- **Integrated Zustand** for global state (auth, sockets, themes), creating a consistent user experience across sessions.
- Tech Stack: React.js, Node.js, Express, MongoDB, Cloudinary, Tailwind CSS, Render, and DaisyUI.

### **Plant Disease Detection | Demo | GitHub**

- **Built a full-stack AI app** (React.js, React Native, and FastAPI) that identifies plant diseases (Early/Late Blight, Healthy), helping farmers prevent crop loss.
- **Achieved 95% accuracy** with an AI-powered TensorFlow/Keras model, improving agricultural decision-making and yield reliability.
- **Integrated prediction API** with a clean UI, delivering instant results with confidence scores to end users.
- Tech Stack: Python, FastAPI, TensorFlow, Keras, React.js, React Native, JavaScript, and CSS3.

## EDUCATION

**Master of Science, Computer Science**, 3.85/4 GPA  
Michigan Technological University

Aug 2023 – Apr 2025

**Bachelor of Technology, Computer Science**, 3.39/4 GPA  
University of Engineering and Management

Jul 2016 – May 2020

## LEADERSHIP & INVOLVEMENT

- **Research Assistant** at Michigan Technological University
- **Graduate Student Assistant** at Michigan Technological University
- **Student Supervisor** at WADS Dining Services
- Member of the **Indian Student Organization** of Michigan Tech
- **Volunteer** in Cognizant Outreach events.

Jun 2025 – Present

Aug 2024 – Dec 2024

Jan 2024 – Jun 2024

Aug 2023 – Apr 2025

Sept 2020 – Jun 2023