

Dhritabrata Mitra

dmitra2@mtu.edu | (810) 531-3212 | Tempe, Arizona | [LinkedIn](#) | [GitHub](#) | [Portfolio](#)

SKILLS

Frontend: Next.js, React.js, TypeScript, JavaScript (ES6+), HTML5, CSS3, Tailwind CSS, jQuery

Backend: Java, Spring Boot, Spring MVC, Spring WebFlux, Node.js, Express, FastAPI, J2EE, Python

Data & Messaging: PostgreSQL, MySQL, MongoDB, Cassandra, Redis, Apache Kafka, RabbitMQ, Elasticsearch

Cloud & DevOps: AWS (EC2, EKS, S3, CodeDeploy, CloudWatch), Docker, Kubernetes, Terraform, Helm, Jenkins, Linux

Testing & Security: JUnit, Jest, React Testing Library, Cypress, Playwright, Selenium, JWT, OAuth

Tools: Git, REST APIs, WebSockets (Socket.IO), WebRTC, Webpack, Babel, Figma, Agile, Scrum, Maven, Jira

WORK EXPERIENCE

Cognizant

Software Engineer

Sept 2020 – Jun 2023

Project: Estee Lauder

- Engineered a distributed e-commerce system using Next.js, TypeScript, Java, Spring Boot, and PostgreSQL, serving 500K+ monthly users.
- Architected a reactive, event-driven order notification pipeline using Spring WebFlux and Apache Kafka, and integrated RabbitMQ for asynchronous order and notification processing, improving throughput by 30% during peak traffic.
- Implemented real-time product search using Next.js, TypeScript, optimized SQL queries, Redis caching, and Elasticsearch-based indexing for structured and unstructured data, improving query speed and reducing backend load during peak traffic.
- Built a JWT-secured rate-limiting microservice using Java, Spring Boot, Spring Security, and Redis, integrated with enterprise OAuth-protected APIs (10 req/min per user), preventing DoS and brute-force attacks and improving system reliability.
- Integrated a third-party store-selection API service with FamilyMart and Hi-Life using Java, Spring Boot, Next.js, and REST APIs, significantly reducing in-store pickup selection time.
- Cut average production incidents from 250 to 20 per month through root cause analysis across frontend and backend systems.

Project: Capital One

- Engineered a secure, high-performance distributed banking platform using React.js, TypeScript, Java, Spring Boot, Tailwind CSS, and PostgreSQL, serving 2M+ users with financial regulatory compliance.
- Optimized database queries and indexing strategies, achieving 40%+ latency reduction on high-traffic APIs.
- Deployed Spring Boot, Node.js, and React applications in Linux-based AWS EC2 and EKS using AWS CodeDeploy, monitoring via CloudWatch, and reducing release cycles by 50%.
- Implemented CI/CD pipelines using Jenkins, AWS CodeDeploy, and IAM, enabling secure automated deployments and reducing manual errors by 30%.
- Containerized Spring Boot microservices using Docker and orchestrated them with Kubernetes, using Terraform to enable independent deployments, automated scaling, and zero-downtime releases.
- Mentored 5 interns, led code reviews, and introduced shared coding standards that significantly reduced post-release defects across multiple deployments.

Project: Walmart

- Engineered a single-page e-commerce platform using React.js, TypeScript, Java, Spring Boot, and Cassandra, serving 10M+ monthly users, and contributing to \$15B+ in annual revenue.
- Enhanced filtering, sorting, and pagination to improve product discovery, driving a 10% lift in session duration and 20% higher customer engagement on category pages.
- Built and improved RESTful APIs and GraphQL APIs to connect frontend and backend systems more efficiently, making data loading faster and reducing page errors.
- Redesigned product listing, cart, and transactional email UI using React.js, TypeScript, and Tailwind CSS, reducing support inquiries.

- Lowered production issues with unit testing (Jest, React Testing Library, and JUnit), and end-to-end testing (Cypress, Playwright, and Selenium) following Test-Driven Development (TDD) practices.
- Reduced frontend load times through lazy loading and Webpack code splitting, improving site performance.

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 by 35% 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, eliminating problem-solving delays during meetings and providing training.
- Implemented video calls, screen sharing, and recording using Stream SDKs and WebRTC, solving remote collaboration and knowledge-sharing gaps during meetings.
- Architected a scalable backend with tRPC, Drizzle ORM, and NeonDB, powering type-safe APIs, faster queries, and advanced search and filtering, improving navigation efficiency.
- Designed a subscription-based payment system with Polar API supporting recurring plans and usage tracking.

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

- Built a real-time WebSocket-based chat application using Socket.IO, addressing delays in teamwork by providing immediate messaging and media sharing.
- Implemented secure authentication with OAuth (GCP) and JWT, preventing unauthorized access and strengthening protection of sensitive application features.
- Integrated Zustand for global state (auth, sockets, themes), creating a consistent user experience across sessions.

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.

EDUCATION

M.S. in Computer Science, Michigan Technological University, GPA: 3.85/4.0

Aug 2023 – Apr 2025

B.Tech in Computer Science, University of Engineering & Management, GPA: 3.39/4.0

Jul 2016 – May 2020

LEADERSHIP & INVOLVEMENT

- **Research Assistant** at Michigan Technological University Jun 2025 – Present
- **Graduate Student Assistant** at Michigan Technological University Aug 2024 – Dec 2024
- **Student Supervisor** at WADS Dining Services Jan 2024 – Jun 2024
- Member of the **Indian Student Organization** of Michigan Tech Aug 2023 – Apr 2025
- **Volunteer** in Cognizant Outreach events. Sept 2020 – Jun 2023