Upendra Dommaraju

Dayton, Ohio | +1 3267779328 | upendradommarajuu@gmail.com | LinkedIn | Github | Leetcode

Professional Summary

Full-Stack Engineer with AI Integration experience, specializing in the design and delivery of cloud-native services. Built Kafka-based event workflows and implemented Redis cache-aside patterns to significantly improve processing throughput and API performance under peak load. Strong background in microservices architecture, Node.js, API design, and performance optimization, with a focus on building scalable and reliable systems that drive business growth.

Technical Skills

- **Programming**: JavaScript (ES6+), TypeScript, Python, SQL
- **Full Stack & API Engineering**: HTML5, CSS3, React.js, Redux, Node.js, Express.js, Next.js, RESTful API Design, API Versioning, Idempotency, Authentication & Authorization (JWT, OAuth 2.0), Asynchronous Programming, API Documentation, Secure API Design, Role-Based Access Control (RBAC)
- **AI Integration & LLM Engineering**: LLM API Integration, Prompt Engineering, Retrieval-Augmented Generation (RAG), Embeddings & Semantic Search, Vector Databases, AI Workflow Orchestration, Streaming AI Responses, AI Cost Optimization, Secure & Scalable AI System Design, Retry & Fallback Strategies, Prompt Injection Mitigation
- **Microservices & Distributed Systems**: Microservices Architecture, Event-Driven Systems, Asynchronous Messaging, Service-to-Service Communication, System Design, Apache Kafka, API Gateway, API Testing
- **Databases & Caching**: MongoDB, PostgreSQL/MySQL, Redis, Indexing Strategies, Data Modeling, Read/Write Optimization, Consistency & Performance Trade-offs
- **Cloud-Native & Platform Engineering**: CI/CD, Docker, Kubernetes (Pods, Services, Deployments, Autoscaling), AWS (EC2, S3, RDS, Lambda), Cloud-Native Design Principles, Nginx (Reverse Proxy, Load Balancing)
- **Observability & Operations**: Structured Logging, Metrics (Prometheus-style), Monitoring, Alerting, Production Debugging
- **Core Computer Science**: Data Structures & Algorithms, Object-Oriented Design, Operating Systems, Database management systems

Experience

CoverMyMeds **Jun 2024 - Dec 2025**

Software Engineer(Internship) *Twinsburg, Ohio*

- Delivered scalable backend services using Node.js, Express.js, and MongoDB on AWS (EC2), enabling reliable processing of high-volume, mission-critical workflows with improved system stability and reduced downtime.
- Helped evolve the platform from tightly coupled services to a MERN microservices architecture using Docker containers and AWS Lambda, increasing deployment independence, improving fault isolation, and speeding release cycles
- Designed and integrated RESTful APIs and maintained legacy SOAP integrations as needed, enabling secure communication with internal services and external partners and reducing integration errors
- Worked with frontend teams to deliver features using React.js, aligning UI components, API contracts, and backend logic
- Built MongoDB-backed data processing pipelines using Node.js and modern JavaScript patterns (async/await, array methods), supporting both batch and transactional workloads while significantly reducing processing time.
- Integrated LLM APIs into backend workflows of MERN applications to automate text analysis, content generation, and decision support, reducing manual review time and improving response consistency
- Designed backend pipelines that use prompt engineering and structured JSON outputs with workflow orchestration, enabling reliable and scalable AI integrations that increase processing throughput and simplify maintenance

Accenture **Jan 2020 - Nov 2023**

Full Stack Engineer *Chennai, India*

- Owned the design and evolution of Node.js and Express.js backend services, enforcing clear controller–service–data layer boundaries to improve code quality, testability, and long-term maintainability across MERN applications.
- Designed and implemented Kafka-based event-driven workflows to support asynchronous processing, improving system resilience and reducing tight coupling between MERN microservices.
- Led MongoDB data modeling and indexing strategies, aligning schemas with real access patterns to ensure consistent low-latency performance under high-throughput workloads.
- Introduced a Redis cache-aside pattern for hot-read API paths, offloading MongoDB and improving average API response times by up to 40% during peak traffic.
- Designed and secured RESTful APIs using Express.js with authentication, authorization, and request validation, enabling reliable frontend consumption from React-based user interfaces.
- Collaborated with frontend engineers to define stable API contracts and data shapes using OpenAPI specifications, enabling React components to consume Node.js services and reducing integration defects
- Drove containerization (Docker) and Kubernetes deployment standards for MERN services, improving deployment consistency, horizontal scalability, and operational visibility across environments.

Education

University of Dayton **Jan 2024 - Dec 2025**

Master of Science, Computer Science *Dayton - Ohio*

- **GPA:** 3.7