Ziad Ahmed

Senior Backend Engineer Node.js TypeScript NestJS PostgreSQL Redis AWS
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Senior backend engineer with 5+ years building and runs scalable services in Node.js and TypeScript on PostgreSQL MySQL (AWS RDS) MongoDB and Redis with queue based architectures on BullMQ and AWS SQS/SNS Solo built the backend of a US voice AI SaaS platform end to end from billing and distributed call scheduling to AWS cost security and containerized deployment Track record of measurable wins: a 115× faster API 98% less memory on large exports and about $2,000/year cut from AWS spend
Uses Claude Code MCP and agent harnesses daily to ship faster with human reviewed AI assisted development

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Senior Backend / Platform Engineer Solid Ground Solutions LLC

Jan 2025 – Apr 2026 · Contract · Remote (US)

SaaS call platform · React (Next.js) Node.js · Redis · MongoDB · AWS. Postgres. Stripe

Core platform

- Solo built the backend of an AI voice-agent outbound calling platform: 153 REST APIs, ~85K lines of TypeScript and 629 commits over 9 months, covering campaigns billing and real time call monitoring
- Designed a Redis backed Deficit Round Robin dispatcher with atomic Lua-script leader election and per user capacity limits giving fair distributed call scheduling across multi worker clusters
- Built billing end to end: real time credit deduction Stripe auto recharge automatic campaign pausing on low balance and signup with OTP verificatio Stripe Checkout webhook activation and automated Twilio subaccount provisioning
- Built a workflow engine from scratch on cron scheduling and a database thread pool with event driven messaging on AWS SQS and SNS and transactional email through SES
- Built an AI post call pipeline that turns transcripts into structured CRM data, detecting voicemails, appointments and customer interest and extracting lead names
- Delivered multi agent "Squads" call routing (AI-to-AI transfer chains) and a self service voice-cloning library with S3 backed uploads
- Implemented fraud detection for the platform
- Refactored a 577 line campaign service into Clean Architecture and wrote the engineering playbook adopted across the codebase

AWS infrastructure cost and security

- Cut AWS spend by about $2,000/year: upgraded the RDS Postgres version (~$150/month saved) deleted idle EC2 instances and released unused Elastic IPs
- Resolved a production RDS outage caused by stale database connections leaking memory and scaled RDS horizontally to absorb load
- Detected a leaked AWS access key revoked it and replaced shared credentials with per engineer IAM users scoped by least privilege policies
- Containerized the full backend and frontend with Docker
  Integrated Twilio, Telnyx, Facebook Lead Ads, Mailchimp, Microsoft Outlook, Google Calendar, Google Analytics and BigQuery

Senior Backend Engineer Nugttah

Jul 2025 – Jul 2026 · Full-time

Loyalty & rewards platform & F&B · Node.js · Go · MongoDB · AWS

- Led an emergency infrastructure migration from Bahrain to Mumbai in response to regional geopolitical escalation; proactively assessed server risk, planned, and executed the full migration with zero data loss
- Achieved a 115× performance improvement in the Order List API by optimizing MongoDB queries to fully restore index utilization zero schema changes required
- Re-architected the order export pipeline to reliably process 100,000+ records without timeouts, reducing memory usage by 98% while ensuring accurate Arabic text rendering
- Reduced production server startup time by 97% by introducing asynchronous processing, eliminating queue blocking, and implementing reliable lost-message handling
- Resolved MongoDB replication race conditions through master-slave synchronization, improving data consistency across distributed nodes
- Gracefully handled a Cloudflare security incident by migrating users to internal infrastructure, preventing exposure to compromised third-party platforms

Mid-level Backend Engineer Botit

Sep 2023 – Sep 2025 · Full-time

E-commerce / delivery platform · Node.js · MongoDB · Shopify

- Built real-time Shopify **integrations** and a notification service (APNs, Firebase) for event-driven data synchronization
- Boosted query performance by **30–42%** and improved deployment speed by 45% in the CI/CD (GitHub Actions) workflow
- Wrote unit and integration tests, documented REST APIs with Swagger/OpenAI, and applied threat modeling and input sanitization
- Replaced Retool with a custom internal dashboard; participated in code reviews and led the engineering interview process

Teaching Assistant — AAST University (AASTMT)

Feb 2026 – Jun 2026 · Part-time

Software Engineering Department

- Taught and mentored in Software Component Design and programming fundamentals (Java, data structures, OOP, APIs, SQL) **PROJECTS**

KO-DB — Key-Value Database Engine (from scratch) Repo

Go

- Designed and built a **key-value store database from scratch in Go**, implementing core storage, retrieval, and persistence internals
- Published a **YouTube walkthrough** explaining the database design and internals, demonstrating deep systems and data-structure fundamental
- Built compressed WAL file logic to fetch data when DB restarted
- Designed Network layer from scratch using TCP protocol to handle read and write to DB
- Sharded the main DB to multiple clusters So I can achieve best optimization efficiency

TECHNICAL SKILLS

Backend: Node.js, NestJS, Express.js, Python, Go (Golang) RESTful APIs, GraphQL, gRPC, WebSockets, Webhooks
Cloud & DevOps: AWS (EC2, S3, Amplify), Docker, Kubernetes, Terraform (IaC), CI/CD, GitHub Actions, NGINX, Cloudflare
Databases: PostgreSQL, SQL Lite (relational), MongoDB (NoSQL), Redis, schema design, indexing, query optimization
Architecture & Practices: Microservices, Event-Driven Architecture, SOLID, Clean Architecture, DDD, Design Patterns, Threat Modeling
Testing & Collaboration: Jest, Super Test, Mocha, Cypress, code reviews, Agile / Scrum delivery

Queues & Messaging: BullMQ, RabbitMQ, Redis-backed job processing, Kafka

EDUCATION

B.Sc. Computer Science — Arab Academy for Science, Technology & Maritime Transport Oct 2021 – Jun 2025
GPA **3.72 / 4.0** · Ranked **3rd** in cohort · Excellent with Honor