KIRUBEL TOLOSA

Upper Marlboro, MD

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SUMMARY

Senior backend-focused Full Stack Engineer with 9+ years designing and delivering **cloud-native, distributed, secure, and AI-aware systems**. Deep expertise in **C#/.NET, Angular and React ecosystems, microservices, event-driven architecture, high-throughput data processing, and API security**. Hands-on builder of intelligent systems including **LLM integration, RAG retrieval, embeddings, time-series modeling, and multi-agent automation**. Experienced working across **Azure and AWS**, modernizing legacy platforms, and delivering scalable full-stack solutions that prioritize reliability, security, and performance.

TECHNICAL SKILLS

Languages: C#, JavaScript, TypeScript, Python, SQL, Java, R
Backend: .NET Core, ASP.NET, Entity Framework Core, MEF (Modular Extensibility Framework), Spring Boot, distributed background services
Frontend: Angular, React, Redux, hooks-based components, Tailwind CSS, Bootstrap, responsive SPA development
Cloud (Azure): Azure Functions, Durable Entities, Logic Apps, Service Bus, Event Hubs, Event Grid, Cosmos DB, Cognitive Search, Blob Storage, CDN, App Configuration, APIM, Key Vault, App Insights
Cloud (AWS): EC2, S3, IAM, Lambda, EKS, CloudFront
DevOps Exposure: Docker, Kubernetes, Terraform, GitHub Actions, Azure Pipelines, CI/CD, observability and monitoring
AI & Distributed Systems: LLM APIs, RAG, embeddings, agent orchestration, decision trees, federated learning, and 3D/VR data visualization.

PROFESSIONAL EXPERIENCE

Senior Software Engineer
Halliburton | Dec 2022 – Present | Houston, TX

- Modernized a monolith into 12 independently scalable .NET Core microservices, containerized with Docker and deployed on Kubernetes, reducing build and deploy cycles from about 1 hour to less than 5 minutes per service and enabling multiple daily releases.
- Built a **distributed Windows background monitoring and automated recovery service** supporting 20+ application servers, improving resilience and significantly reducing system downtime.
- Designed and delivered modular plugin-driven backend architecture using **MEF + MongoDB + EF Core**, improving system extensibility for new domain modules.
- Developed and deployed **5+ production Angular applications and RESTful APIs** powering real-time telemetry, equipment initialization, and operational reporting systems.
- Implemented service containerization, Kubernetes health checks, load balancing, and automated deployment patterns.
- Mentored junior engineers on clean coding, unit testing, microservice design, and deployment pipelines.

Stack: .NET Core, Angular, SQL Server, MongoDB, Docker, Kubernetes, Azure DevOps

Software Engineer

Paycor | Jun 2021 – Dec 2022 | Cincinnati, OH

- Stood up a **Data Services** .NET Core microservice supporting accrual, rollover, proration, and payout calculations, later integrated into APIM with attribute-based execution filters.
- Reduced scheduled task and batch processing times **from hours to less than 10 seconds** by redesigning workflows using **Azure Durable Entities** and optimizing high-volume Java background processors.
- Built **Time Off Rules APIs + validation + automated unit and integration test suites** (MSTest + Moq), improving rule correctness and reducing regressions.
- Developed UI + server-side features for **Rollover-to-Types, Expire Rollover, Proration, and Payout/Earning configurations**, integrating them with backend APIs.
- Built **Snowflake employee mapping and company-scoped preload ingestion pipelines**, migrating accrual data into Snowflake for high-volume preloading.
- Refactored Accrual UI components into modern Angular/React reusable component patterns.
- Resolved **IDOR API access vulnerabilities**, strengthening API access isolation and security posture.
- Delivered API extensions including Service modification, PunchSetting updates, PICL/MadLib UI conversions, Paystub configuration options, CI/CD branching strategies, and release support.

Stack: .NET Core, React, Cosmos DB, Snowflake, Azure Functions, Event Grid, Key Vault, App Insights

Software Engineer

Newwave (OnyxHealth) | Jul 2020 – Jun 2021 | Elkridge, MD

- Built a **Knowledge Mining & AI search MVP using Azure Cognitive Search**, processing 100K+ unstructured healthcare and HCM domain records.
- Designed and implemented backend architecture using **SQL Server + ASP.NET MVC**, delivering imaging-center workflows, stored procedures, and indexed relational data access.
- Integrated **Azure Logic Apps** for email analysis and automated recording into SQL databases for structured document processing and entity extraction.
- Developed and extended **Azure Function Apps** to serve as cognitive enrichment modules, enabling custom search skill invocation, text classification, and vector embedding integration.
- Implemented **Azure AD authentication and authorization** for MVC search UI applications.
- Built **white-labeling UI configuration flows using Azure App Configuration**, enabling dynamic environment-scoped feature toggles and tenant-level branding.
- Delivered CI/CD pipelines for Web Apps using **Azure Pipelines and GitHub Actions**.
- Built geospatial and AI visualization tooling including Unreal Engine DataViz modules, Black Power DC engagement maps, Watson tone analyzer integration, federated learning research prototypes, COVID-19 APIs and follow-up applications.
- Authored technical blogs on Azure data migration, function orchestration, Cognitive Search skills, and Azure authentication.

Stack: .NET Core, Django, JavaScript, Bootstrap, SQL Server, Azure Cognitive Services, Blob Storage, App Services

Research Assistant – Distributed Systems & AI

UMBC | Nov 2019 – Jan 2021 | Baltimore, MD

- Built data pipelines for **time-series data wrangling, transformation, statistical decomposition, filtering, and temporal feature engineering in R and Python.**
- Developed an **EEG signal analysis and modeling pipeline,** extracting brainwave features and validating temporal neural decision patterns using machine learning.
- Modeled and designed **SQL Server relational databases** supporting an **ASP.NET MVC imaging center web application,** including schema design, stored procedures, indexing strategies, and query optimization.
- Built 3D/VR data-driven visualization modules using Unreal Engine (C++), CouchDB APIs, and geospatial data layers.
- Built GIS story map web applications combining **R, Python, JavaScript, and relational data layers,** increasing user engagement significantly.

Stack: Unreal Engine (C++), R, Python, SQL Server, ASP.NET MVC, JavaScript, HTML/CSS, CouchDB

Software Developer

Zemen Solution | Sep 2015 – Aug 2019 | Addis Ababa, Ethiopia

- Built **high-throughput REST APIs and ASP.NET MVC applications** supporting transactional enterprise systems.
- Designed **SQL Server and PL/SQL relational databases, stored procedures, indexes, and query performance optimizations.**
- Built **JavaScript and React SPAs with responsive UI and AJAX integration.**
- Wrote **100+ unit and integration tests** using MSTest, improving release reliability and test automation maturity.

Stack: C#, ASP.NET MVC, React, SQL Server, PL/SQL, MSTest

EDUCATION

M.S. Computer Science | Distributed Systems, AI, Systems Design
University of Maryland, Baltimore County (UMBC) | May 2021

B.Sc. Computer Science
Addis Ababa University | Feb 2016

CERTIFICATIONS

Microsoft Certified: Azure Developer | Issued Feb 2021 | ID: H680-7270

AWARDS

USM COVID App Innovation Challenge | Jul 2020
Built symptom tracking APIs and follow-up COVID patient monitoring application