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EXECUTIVE SUMMARY:

Principal-level Backend Engineer and Technical Lead with 20+ years of experience designing, building, and leading delivery of cloud-native, distributed systems on Microsoft Azure and .NET. Proven track record of building platforms from the ground up, modernizing legacy systems, and leading globally distributed teams. Deep expertise in event-driven architectures, IoT data ingestion, Azure data platforms, and enterprise REST APIs, with strong focus on resiliency, scalability, and long-term engineering excellence.

CERTIFICATIONS AND PROFESSIONAL FOCUS:

- Microsoft Certified: Azure Fundamentals (AZ-900)
- Microsoft Certified: Azure AI Fundamentals (AI-900)

Strong interest in applying AI and machine learning capabilities within cloud-native platforms, including AI-assisted development, intelligent data processing, agent-based AI patterns and automation.

WORK EXPERIENCE:

Software Engineer V / Backend Technical Lead, Ecolab — Saint Paul, MN (May 2025 – Present)

Backend Technical Lead, leading a newly formed team to migrate Pest Elimination business unit data from multiple legacy systems to Ecolab's enterprise E3D platform, building cloud-native ingestion, streaming, and API services on Azure (.NET 8) from the ground up.

- Led backend architecture, design, and delivery for an Azure-based data integration initiative, migrating Pest Elimination data from discrete legacy systems into Ecolab's modern E3D data platform.
- Designed and implemented a new (greenfield) Azure Streaming Analytics job to filter and route Pest IoT data from Azure IoT Hub to legacy SQL Server, decoupling ingestion from downstream failures, minimizing system blast radius, and enabling lossless recovery.
- Built Azure Function Apps to ingest real-time Pest IoT data from thousands of Bluetooth and LoRa enabled devices into the E3D platform via Azure Event Hubs.
- Built Azure Function Apps to extract 'Service Visit' data from legacy systems via Azure Service Bus and deliver it into a newly provisioned Cosmos DB within the E3D platform supporting near real-time global data ingestion pipelines operating 24/7.
- Developed a .NET 8 RESTful Web API exposing Cosmos DB data for consumption by frontend UI applications and enterprise reporting tools.
- Established foundational engineering practices for the program, including Infrastructure as Code (IaC), CI/CD pipelines, Azure DevOps repository structure, standardized solution layouts, Git workflows, branching strategies, pull request review standards, and quality gates.
- Acted as Backend Team Lead for a globally distributed team of junior engineers and DevOps contributors by authoring detailed technical stories and designs, mentoring developers through implementation and reviews, and enforcing code quality, reliability, and operational standards.
- Partnered closely with Solution Architects, UI teams, and Cloud Infrastructure teams to translate high-level business requirements into production-ready technical designs, coordinate access to Azure resources, and ensure cross-team alignment.

Tools, Platforms & Technologies:

C#, .NET 8, ASP.NET Core, Azure Functions, Azure Streaming Analytics, Azure IoT Hub, Azure Event Hubs, Azure Service Bus, Cosmos DB, SQL Server, REST APIs, Azure DevOps (CI/CD pipelines, Infrastructure as Code), Microsoft Visual Studio, VS Code

Senior Software Engineer (Full Stack), Cargill — Wayzata, MN (July 2021 – February 2025)

- Contributed to the design and delivery of a large-scale, cloud-native enterprise platform on Microsoft Azure, supporting global animal feed production across multiple regions and business units.
- Designed and implemented RESTful backend APIs using ASP.NET Core to support core business workflows and near real-time data access.
- Worked extensively with multi-region, multi-tenant Azure Cosmos DB, optimizing data models and access patterns for low latency, resiliency, and global availability.
- Implemented event-driven and asynchronous integrations using Azure messaging and storage services to support scalable, decoupled system components.
- Collaborated closely with frontend engineers to deliver end-to-end, full-stack features, supporting SPA-based user interfaces built with React and TypeScript.
- Participated in architectural discussions, design reviews, and production deployments within a globally distributed, cross-functional team.

Tools, Platforms & Technologies:

Azure Cloud:	Azure Cosmos DB, Azure Storage, Azure Functions, Azure Cognitive Services, Azure Service Bus, Azure DevOps
Backend:	Microsoft Visual Studio, C#/.NET Core, .NET Framework 6.0, ASP.NET Core,
Frontend:	VS Code, React 18 / Typescript, Node.js, Materials UI and several other 3rd party packages

Senior Software Engineer, United Healthcare — Minnetonka, MN (September 2020 – June 2021)

- Supported and enhanced critical enterprise healthcare applications used by internal Sales and Marketing teams across multiple U.S. states.
- Delivered bug fixes and targeted feature enhancements across the full application stack, including backend APIs, databases, and frontend components.
- Worked within established enterprise environments and compliance requirements, collaborating with cross-functional teams to ensure stability and accuracy.

Software Engineer III, National Cinemedia — Minneapolis, MN (January 2016–September 2020)

- Designed, developed, and deployed components of a large-scale, distributed enterprise system supporting digital advertisement delivery, playback, and monitoring across 2,000+ movie theaters nationwide.
- Built and maintained backend services and APIs using Microsoft .NET technologies to support data ingestion, processing, and system orchestration.
- Implemented event-driven and messaging-based integrations using Azure Service Bus and Azure Storage to enable reliable, asynchronous workflows.
- Collaborated within cross-functional Agile teams, contributing to design discussions, code reviews, and production releases across backend services and user-facing applications.

Software Engineer II, Smiths Medical N. America — Saint Paul, MN (January 2009 – January 2016)

- Played a key role in the design and development of PharmGuard Server Infusion Management Software, a Class II medical device, multi-tier, multi-server enterprise system operating in regulated healthcare environments.
- Led requirements definition and technical design for multiple critical software components, collaborating closely with development, test, and quality teams to meet FDA, security, performance, scalability, and data integrity requirements.
- Contributed to a service-oriented, modular architecture enabling secure distribution of firmware and drug libraries to connected infusion devices.
- Developed reporting and analytics components used to monitor compliance, analyze infusion safety trends, and support evidence-based clinical decision-making.
- Served as a lead developer on the globalization and localization initiative, successfully globalizing and localizing the platform into nine European languages and Japanese, coordinating across globally distributed teams and in-country reviewers.
- Helped establish tools, processes, and best practices that were reused across subsequent projects within the organization.

PREVIOUS WORK EXPERIENCE:

Software Engineer III, Teledyne Controls Inc. **Saint Paul, Minnesota. (January 2008 – November 2008)**

- Developed components of a distributed configuration management system for aircraft data and information management solutions using Microsoft .NET technologies.

Advanced Software Engineer, 3M Corp. **Saint Paul, Minnesota. (August 2006 – January 2008)**

- Designed and delivered an RFID-based Track & Trace enterprise system for secure management and archival of laboratory specimens in healthcare environments.

Software Engineer Cyberoptics Corp. **Minneapolis, Minnesota. (March 2000 – August 2006)**

- Built and supported **Windows-based engineering and manufacturing software systems** integrating motion control, image processing, data acquisition, and automated calibration for optical and laser inspection sensors.

TECHNICAL EXPERTISE AND APPLIED INNOVATION:

Cloud Platforms & Services
Microsoft Azure (Azure Functions, Event Hubs, Service Bus, Cosmos DB, Azure IoT Hub, Azure Storage, Azure Streaming Analytics), Azure DevOps

Languages & Frameworks
C#, .NET 8, ASP.NET Core, RESTful APIs, .NET Framework

Architecture & Systems Design
Cloud-native architectures, event-driven and message-based systems, distributed systems, IoT data ingestion, data platform integrations, service-oriented architecture (SOA), resiliency and fault-tolerant design

DevOps & Engineering Practices
CI/CD pipelines, Infrastructure as Code (IaC), Git workflows, code reviews, automated testing, release management, operational monitoring

Frontend & Full-Stack Experience
React, TypeScript, JavaScript, SPA architectures, API-driven UI integration

Data & Persistence
Azure Cosmos DB (multi-region, multi-tenant), SQL Server, data modeling, performance optimization

AI & Applied Technical Exploration
Hands-on experience experimenting with and integrating cloud-based and open-source AI tools to evaluate real-world applicability in software systems, including Azure AI Foundry, Hugging Face models, ElevenLabs, and embedded device prototyping (Arduino) as part of edge-to-cloud and AI-enabled system exploration.

Leadership & Collaboration
Technical leadership, mentoring and coaching engineers, architecture reviews, cross-team collaboration, working with globally distributed teams

EDUCATION:

Master of Science in Software Engineering
University of St Thomas, St. Paul, Minnesota

BS Manufacturing Engineering Technology
Minnesota State University, Mankato, Minnesota