

# Randall Long

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Bridgeport, Michigan - 231-360-8716 - rlong.hails12135@gmail.com

## Senior Software Engineer

C# | .NET | AWS | Azure | Distributed Systems | Microservices | PostgreSQL | Terraform | Python

## Professional Summary

Senior software engineer with more than twenty years of experience designing scalable backend systems, distributed service architectures, and cloud-hosted platforms. Extensive experience building REST APIs, microservice ecosystems, and high reliability production systems supporting large-scale applications. Background includes financial services platforms, logistics optimization systems, patented medical imaging technology, and enterprise cloud migrations.

## Key Systems Delivered

- Designed microservice orchestration framework coordinating complex business workflows across distributed services with rollback capability and centralized logging.
- Contributed to backend infrastructure supporting mortgage application platforms serving hundreds of thousands of users.
- Developed Python logistics optimization services deployed on AWS Elastic Beanstalk using Docker containers.
- Co-invented patented medical image processing system producing flattened medication bottle imagery from video streams.
- Developed toxic exposure management platform supporting toxicology call center operations.
- Improved C++ CPU validation testing suites used in processor development, reducing execution time by approximately twenty five percent.

## Core Technical Skills

- C#, .NET / ASP.NET Core, Python, SQL, JavaScript, TypeScript, C++
- AWS including EC2, Aurora, and Elastic Beanstalk
- Docker containerization and Terraform infrastructure automation
- REST APIs, distributed systems design, microservices architecture, event sourcing patterns
- PostgreSQL, Amazon Aurora, SQL Server, DynamoDB
- CI/CD pipelines, feature flag systems, cloud migration strategies

## Professional Experience

### X86 Consulting - Architect / Development Consultant (2023-Present)

Designed and implemented backend analytical services supporting logistics planning and order processing workflows. Developed Python-based optimization services deployed through Docker containers on AWS Elastic Beanstalk and automated provisioning of cloud resources using AWS CLI and EB CLI tooling. Evaluated locally hosted large language models for analytical workloads on Linux infrastructure and conducted scalability testing and operational validation of cloud-hosted services. Architecture and coding for EHS system for patient intake, including voice-to-text capturing of patient notes. Setup of Azure deployment environment, including Github to Azure CI/CD via Azure DevOps.

### **KBX Logistics - Tech Lead / Senior Software Engineer (2022-2023)**

Led an eight engineer development team delivering a distributed logistics management platform. Designed backend architecture integrating PostgreSQL, DynamoDB, and AWS Aurora data stores and implemented REST APIs supporting shipment planning workflows and operational analytics. Collaborated closely with product managers, UI engineers, and DevOps teams to deliver production capabilities and evaluate machine learning initiatives focused on improving logistics optimization. Acted as technical architect for integration work to include Python-implemented machine learning systems under ongoing development by external team, by means of REST API's. Specification of data models for data transformation outbound and inbound with external code. Evaluated and did proof-of-concept work toward potential conversion of the Python codebase to C# and gRPC, to allow for closer integration with KBX development and infrastructure roadmap.

### **Rocket Mortgage - Senior Software Engineer (2018-2021)**

Developed backend services supporting mortgage application platforms used by hundreds of thousands of users. Implemented infrastructure automation using Terraform to manage cloud-hosted Aurora database environments and led analysis and scripting for migration of on-premise SQL Server systems to Amazon Aurora. Developed feature flag frameworks supporting controlled rollout and rollback of production functionality and contributed to CI/CD pipelines supporting continuous delivery. Developed event sourcing pattern orchestration layer for coordinating required microservice invocations, providing extended logging, multi-microservice rollback capability, and allowing simplified business process named invocations to be used by developers, with the orchestration layer storing via on-prem SQL Server the "business function catalog" of particular microservice calls necessary for the business function.

### **VersaImage Software - Senior Software Engineer (2010-2018)**

Architected HIPAA-compliant medical imaging and prescription verification platform using C#, ASP.NET, and SQL Server. Integrated Tesseract OCR technology for automated recognition of prescription labels and developed custom image processing algorithms producing flattened bottle imagery from video streams. Collaborated with hardware engineering teams integrating custom scanning devices and migrated infrastructure to AWS EC2 environments. Developed C# and VB6 code to enhance legacy products.

### **Software Engineer / Consultant - Various Clients (2001-2010)**

Developed enterprise applications across financial services, healthcare, petroleum, and insurance industries. Implemented web applications using ASP, C#, SQL Server, and VB6 and designed systems supporting enterprise data migration, reporting systems, and business process automation. Delivered custom software solutions for clients including IBM, Coldwell Banker, and Amway.

### **Patents**

Co-inventor on two patents in the image analysis domain related to automated recognition and processing of medical imagery.

### **Education**

Completed undergraduate coursework in Computer Science (three years) and Liberal Arts (two years). Professional expertise developed through extensive industry experience delivering production software systems.