

# Rob Carlson

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**I am a software developer with over twenty-four years of experience** in software development and information systems spanning government, commercial admin, engineering, manufacturing, legal, health care, and marketing.

**In my most recent role, I was a key contributor** to an access control prototype where my extensive experience with modern authentication protocols, rapid prototyping in multiple cloud environments, and diverse experience helped my team deliver a new model for CDC.

## Experience

6/2022 to Present – Software Engineer III, Fearless Solutions, LLC

- **CDC Digital Gateway:** I led the development of an **Attribute-Based Access Control (ABAC)** prototype for CDC data providers and consumers using the **Azure AD B2C** platform and token enhancement to handle fine-grained access control across multiple identity provider systems including the **Secure Access Management System, Azure Entra, and Auth0**. I leveraged **Azure Function Apps** for rapid prototyping and explored authentication protocols such as **OAuth2, OpenID Connect** using **JWT** to deliver a **low-code** proof of concept, then presented this solution to groups of stakeholders including the Cybersecurity Program Office to be a supported model authentication at CDC.
- **Healthcare.gov Appellant Portal:** As the engineering lead on a team of nine, I guided the technical and architectural design of a portal for the Marketplace Appeals Group for the **Centers for Medicare and Medicaid Services**. Built in **React, ExpressJS, and Amazon AWS** services **DynamoDB** and **API Gateway**, this portal automated processes, improved transparency, and provided a user-friendly hub for appellants, CMS employees, and contractors. It significantly streamlined the appeals process, aligning with CMS's goal of simplifying healthcare access during and after the COVID-19 pandemic.

9/2011 to 6/2022 – Senior Application Developer, Havas Helia

High-level development and operations for clients including **Liberty Mutual Insurance, Cracker Barrel, Bertolli, Sonic Drive-In, and American Iron and Steel Institute:**

- Developed and maintained large-scale enterprise applications using **C#, ASP.NET MVC, and Entity Framework** and smaller CMS in **Wordpress, Drupal, Ruby on Rails, Python, and NextJS** among others. Managed customer cloud-based infrastructure, deploying production web services on **AWS EC2, Lambda, and CloudFront**.
- Worked on the integration of various marketing systems, ensuring seamless **data flow and process automation** for customer capture and marketing data for key clients and led several design and performance optimization initiatives, ensuring **compliance with SOC, HIPAA, GDPR, and CCPA** guidelines.

# Professional Skills

## Software Development & Programming

I have extensive experience developing in **C#**, **ASP.NET MVC**, **Entity Framework**, **Python**, **NodeJS**, and **React**, and have worked with content management frameworks like **Django**, **WordPress**, and **Sitecore**. My backend development skills include building APIs and services using **Express JS**.

## Collaboration & Project Leadership

I excel in **cross-team collaboration** and **project leadership**, having led technical projects like the Healthcare.gov Appellant Portal. I work closely with stakeholders to understand their needs and provide effective solutions, and I deliver **presentations and technical demos** that secure buy-in from leadership. I produce **clear documentation** including system requirements and technical reports to ensure smooth project execution and ongoing support.

## Cloud Platforms & Services

In the cloud space, I specialize in **Azure AD B2C** for token orchestration and authentication, and I use **Azure Function Apps** for rapid prototyping of serverless applications. I'm proficient with **AWS** technologies, including **EC2**, **Lambda**, **CloudFront**, and **API Gateway** for managing production environments and micro-services.

## Authentication & Security

I have a deep understanding of **authentication protocols** like **OAuth2**, **OpenID Connect**, and **JWT**, which I've used to implement **Attribute-Based Access Control (ABAC)** systems for fine-grained access control across multiple identity providers. My work adheres to best practices in security, ensuring compliance with standards such as **NIST 800-53**, **SOC2**, **HIPAA**, **GDPR**, and **CCPA**.

## Databases & Data Management

I am proficient in **SQL Server**, **PostgreSQL**, **MySQL**, and **DynamoDB**, with expertise in database design, stored procedure programming, secure configurations, and incremental deployments. I ensure compliance with data security and retention guidelines across multiple industries, including healthcare and government.

## DevOps & Infrastructure

My **DevOps** experience includes using **Jenkins**, **GitHub Actions**, **JFrog Artifactory** and **Visual Studio Team Services** to build and automate CI/CD pipelines. I have extensive experience in managing source control with **Git** and **GitHub** tools. I've managed critical cloud-based infrastructure on **AWS EC2** and **Microsoft Azure** with **Terraform**.

## Government Systems

I have hands-on experience working with federal government systems such as **CFACTS**, and the **Cloud Estimation Tool**, ensuring compliance with federal standards like **NIST 800-53**. My projects have involved designing and delivering secure, scalable systems that meet federal requirements, including those related to identity management and access control.