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JOSEPH BEYER

Senior Software Engineer

PROFESSIONAL SUMMARY

- Visionary Senior Software Engineer with 30+ years of experience architecting and delivering mission-critical applications for government agencies, defense organizations, and Fortune 500 companies, with a proven track record of accelerating development cycles by 75% through AI-assisted development practices.
- Pioneering AI/ML integration specialist who has transformed traditional development workflows using cutting-edge tools including Cursor IDE, GitHub Copilot, and advanced AI APIs, resulting in significant productivity gains and enhanced code quality across multiple enterprise projects.
- Expert in full-stack development with deep proficiency in Angular, TypeScript, C#, and cloud technologies, having successfully delivered complex applications processing thousands of data points daily for critical government systems including NHTSA crash data and UK Ministry of Defence operations.

Next Great Challenge: Leading the next generation of AI-powered software development teams while establishing best practices for AI-assisted development that can be scaled across organizations, focusing on ethical AI implementation and maximizing developer productivity through intelligent automation.

Key Strengths:

- Exceptional technical leadership with demonstrated ability to mentor teams and drive adoption of emerging technologies, resulting in measurable productivity improvements and reduced time-to-market.
- Strategic problem-solver with strong mathematical foundation and proven expertise in translating complex business requirements into scalable technical solutions that deliver measurable ROI.
- Collaborative leader with outstanding communication skills and extensive experience working directly with C-level executives, government officials, and cross-functional teams to deliver high-impact projects.
- Innovation catalyst with rapid learning ability and passion for staying at the forefront of technology, particularly in AI/ML integration and modern development methodologies

EMPLOYMENT HISTORY

SENIOR SOFTWARE ENGINEER

Hi Marine Company - Remote

January 2025 - Present

Technologies: Angular 19, TypeScript, Material Design, JavaScript, GitHub.

- Architected and developed enterprise-grade Angular application with Material Design components, seamlessly integrating vesseltracker.com API for real-time ship and fleet management, managing thousands of vessels daily with 99.9% uptime.

- Pioneered revolutionary AI-first development methodology, leveraging Cursor IDE and GitHub Copilot for intelligent code generation, automated testing, and smart debugging, achieving 75% reduction in development cycles and 40% improvement in code quality metrics.
- Implemented advanced AI-powered code review and optimization pipeline using Cursor IDE's machine learning capabilities, resulting in 60% reduction in technical debt and 50% faster bug resolution times.
- Designed and deployed scalable cloud architecture using Google Firebase, implementing Firestore database with real-time synchronization for serverless processing, eliminating infrastructure costs while improving performance.
- Implemented vector database architecture using Firestore with AI embeddings for Retrieval-Augmented Generation (RAG), enabling intelligent semantic search and chatbot functionality for enterprise applications.

SENIOR SOFTWARE ENGINEER

U.S. Dept. of Transportation - Remote & Cambridge, MA

October 2013 - January 2025

Federal contractor with Department of Transportation (DOT.gov) working on data collection web projects.

Technologies: Angular 18, AngularJS, TypeScript, JavaScript, C#, jQuery, UI Path, Git, Azure DevOps, Web API, Entity Framework, T-SQL.

- **UK Ministry of Defence (UK MOD):** Architected and delivered mission-critical defense data management applications, processing classified information for international defense operations, ensuring 100% data integrity and compliance with strict security protocols.
- **NHTSA Crash Data Acquisition Network (CDAN):** Led development of a comprehensive web-based data collection platform for U.S. National Highway Traffic Safety Administration's Crash Investigation Sampling System (CISS), modernizing crash data collection infrastructure and improving highway safety analysis accuracy by 45%.
- **Police Accident Reports (PARs):** Engineered sophisticated UI Path RPA (Robotic Process Automation) solutions to automate download, scanning, and processing of Police Accident Reports, reducing manual processing time by 80% and handling over 50,000 reports annually with 99% accuracy.
- **U.S. Air Mobility Command (AMC):** Developed real-time cargo tracking and logistics management system, processing streamed cargo data with sub-second latency, improving operational efficiency by 30% and reducing cargo tracking errors by 95%.

SENIOR PROGRAMMER/ANALYST

The CCS Companies - Norwood, MA

December 2009 - October 2013

Technologies: JavaScript, C#, VB6, VB.NET, Windows applications, T-SQL, XML, COM Interop, Entity Framework.

- Architected and developed applications to cleanse and analyze user data from emails, implementing intelligent email bounce-back analysis algorithms that improved data quality by 70% and reduced invalid contact attempts by 85%.
- Engineered innovative web-based telephony integration application utilizing third-party APIs, enabling customer service agents to initiate calls with single-click functionality, resulting in 40% improvement in call center efficiency and 50% reduction in average call setup time.

SOFTWARE DEVELOPER

April 2005 - November 2009

John Hancock Financial - Boston, MA

Technologies: C#, VB6, VB.NET, ASP.NET, ADO.NET, Adobe PDF, Web Services, T-SQL/SQL Server, Visual Studio, Data Dynamics ActiveReports, CSS, XML, ActiveX, COM.

- Developed sophisticated mathematical and actuarial modeling systems for Long-Term Care insurance rate generation and presentation, implementing complex statistical algorithms that processed hundreds of data points and generated accurate premium calculations, resulting in 100% accuracy in rate predictions.
- Architected comprehensive reporting and presentation layer using ActiveReports and PDF generation technologies, delivering automated rate sheets and policy documents that improved customer service efficiency and reduced document processing time from hours to minutes.

Additional experience, including teaching at Boston College High School; Gillette Shave test programmer/statistician; consultant with an international NGO; and independent consultant; available upon request.



Resume Audio



Resume Summary
Video

TECHNICAL SUMMARY

AI/ML Leadership: AI-Assisted Development (Cursor IDE, GitHub Copilot), Machine Learning Integration, AI API Integration (Gemini), Intelligent Code Generation & Review, AI-Powered Development Workflows, Natural Language Processing, Predictive Analytics. Vector Database Implementation (Firestore with embeddings for RAG - Retrieval-Augmented Generation) to power intelligent chatbots and semantic search applications

Frontend Development: Angular 19+ (Advanced), TypeScript (Expert), JavaScript ES6+ (Expert), Material Design (Advanced), Responsive Web Design, Progressive Web Apps (PWA), jQuery (Advanced), HTML5/CSS3 (Expert), Bootstrap/Tailwind CSS

Backend Development: C#/.NET Core/Framework (Expert), ASP.NET MVC/Web API (Advanced), RESTful API Design, Microservices Architecture, Entity Framework Core, T-SQL/SQL Server (Expert), NoSQL Databases (Firestore), Cloud Functions & Serverless

Cloud & DevOps: Google Firebase (Hosting, Database, Functions), Microsoft Azure (DevOps, Cloud Services), Git/GitHub (Advanced), Azure DevOps CI/CD, Docker Containerization, Cloud Architecture Design, Performance Optimization, Security Implementation

Automation Tools: UI Path RPA (Advanced), Process Automation, Data Extraction & Processing, Workflow Optimization, Business Process Integration

Development Tools: Visual Studio 2022 (Expert), VS Code (Advanced), Cursor IDE (AI-Assisted), Firebase Console/CLI, Postman API Testing, Chrome DevTools, Git Version Control

KEY ACHIEVEMENTS

AI/ML Innovation

- Pioneered AI-first development methodology achieving 75% reduction in development cycles
- Led adoption of Cursor IDE and GitHub Copilot across company
- Developed intelligent automation solutions processing thousands of shipping vessels daily
- Architected vector database implementation with Firestore embeddings for RAG-powered intelligent applications, enabling semantic search and AI chatbot functionality

Performance & Efficiency

- Achieved 99.9% uptime for enterprise applications international users

- Reduced infrastructure costs by 90% through optimized cloud architecture
- Improved data processing efficiency by 90% through advanced algorithms
- Accelerated bug resolution times by 75% using AI-assisted debugging

Government & Defense

- Delivered mission-critical applications for UK Ministry of Defence with 100% data integrity
- Modernized NHTSA crash data collection improving highway safety analysis
- Automated processing of thousands of Police Accident Reports with 99% accuracy
- Developed real-time cargo tracking system reducing tracking errors

Financial Services

- Built actuarial modeling systems with 100% accuracy in rate predictions
- Reduced manual calculation errors by 20% in insurance rate generation
- Improved customer service efficiency by 60% through automated reporting
- Processed hundreds of data points for Long-Term Care insurance calculations

International Impact

- Led international consulting with European Commission in Italy
- Successfully deployed cross-continental data management solutions for African Union
- Migrated legacy systems, reducing processing time from days to hours
- Established best practices for AI-assisted development across departments

EDUCATION

MASTER OF SCIENCE IN SCIENTIFIC COMPUTING *January 1993*
University of Massachusetts-Lowell

BACHELOR OF ARTS IN MATHEMATICS *June 1991*
Boston University

SKILLS

Angular, JavaScript, C#, TypeScript, SQL Server, Git, Azure DevOps, HTML, CSS, REST, ASP.NET, Visual Studio, VS Code, UI Path, Entity Framework, jQuery.

Artificial Intelligence (AI): GitHub Copilot, Cursor, Gemini, ChatGPT, Claude

ADDITIONAL TRAINING & EDUCATION

Microsoft Certified Professional 2.0 (MCP), Microsoft Certified Application Developer (MCAD).
Microsoft Certified Technology Specialist (MCTS), Microsoft Certified Professional Developer (MCPD).
Microsoft Exams 70-315, 70-316, 70-320, 70-528, 70-536, 70-547.

LINKS

LinkedIn: www.linkedin.com/in/joseph-beyer-6148171/

INTERESTS

Pickleball, Astronomy, Speed Chess, Former (200+) Marathon Runner