

Matthew Dennis

Full-Stack Developer, Application Architect, Quality Assurance, Performance Optimiser, Code Sleuth, Project Manager, always learning.

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Key Skills

Software Architecture	AI	C# / C++	Databases
Software Quality Assurance	Problem Solving	Python	.NET
Project Management	Requirements Analysis	JavaScript	ASP.NET
Performance Optimisation	Always Learning	HTML/CSS	Microservices

Experienced and innovative Senior Developer/Architect with a proven record in delivering high-performance software and database solutions for large-scale platforms. Known for improving system performance, enhancing user experience, and spearheading critical feature developments in .NET and AI technologies. Adept at problem-solving and committed to continuous learning, I bring creative solutions to complex challenges, from software architecture to performance optimization.

I have been developing in C# since the first Visual Studio .NET Beta in 2001/2002, and longer in C++. I strive to keep up to date on the latest features, frameworks, NuGet packages, architecture guidance and best practices.

Collaborative team leader and mentor with a strong ability to drive cross-functional initiatives, ensuring strategic alignment and business success. Whether streamlining backend operations or leading AI integrations, I consistently deliver impactful results that elevate both product quality and user engagement.

Versatile and analytical, I have a rich history of roles that span from hardware design to software architecture, giving me a unique perspective on the full technology stack. My ability to bridge the gap between technical teams and executive leadership has consistently resulted in the successful delivery of projects that meet both business and technical objectives. Whether leading a team in building AI-powered solutions or ensuring seamless project management, I am committed to delivering high-impact results with precision and creativity.

Passionate about Quality Assurance and Continuous Improvement, I have consistently driven initiatives that lead to tangible bottom-line enhancements. My expertise in identifying inefficiencies, coupled with a methodical approach to process optimization, has resulted in significant cost reductions and performance gains. By implementing rigorous testing frameworks and quality control processes, I have not only elevated product reliability but also minimized defects and downtime. My focus on fostering a culture of continuous improvement ensures that each project I lead contributes to the overall profitability and operational excellence of the organization.

Employment

CodeProject Solutions Inc., Toronto, Ontario, Canada

June 2009 – Aug 2024

Senior Developer/Architect

At **The CodeProject**, I have used my experience to deliver robust applications and database solutions that power one of the largest programmer focused websites with user contributed content. Using my deep understanding of .NET, software architecture, and design, I implemented new innovative high-performance features and microservices using C#, ASP.NET, HTM, CSS, and JavaScript. See <https://www.codeproject.com>.

Among the key features I developed were:

- Site Search using Lucene.Net using C# and .NET 5 MVC.
- a system providing timelines of recent content based on articles, messages, tags, and users followed by the member, using C# and .NET 7 MVC
- a 2-layer cache/database using Redis using C#, .NET 6-8 and Redis
- a Learning SPAM Filter using C#, .NET 6-8, and Redis
- Ensuring GDPR compliance

Additionally, my experience in refactoring, event-driven software, as well as finding and remediating both front-end and back-end performance issues, resulted in significant improvements to the system's responsiveness, resource usage, and user experience.

The **CodeProject.AI Server** offers a locally hosted Web API that enables users to access a range of local AI modules, including Object and Face Detection, Model Training, LLM Chat, Image Creation, and more. It is compatible with multiple platforms, such as Windows, Linux, MacOS, Docker, and Raspberry Pi, using various AI frameworks and models in both .NET and Python. The Server was implemented in C# and .NET 7 and 8, while the AI modules were implemented in either C# or Python. See <https://codeproject.ai>.

DeveloperMedia serves as the advertising branch of CodeProject. As Team Lead, I contributed to the development of the email system for CodeProject Newsletters. DeveloperMedia dispatches two to four million emails daily to subscribers, filled with content and advertisements. I provided ongoing support for this system's software, database, and infrastructure. This system was developed using C#, .NET 5, Entity Framework 6, MS SQL and the Razor engine for templating the emails.

CGI, Toronto, Ontario, Canada

Oct 1998 – Oct 2008

Consultant

Various Roles and Responsibilities across multiple engagements. Full project list available.

SharePoint - Performance Analyst, Architect & Developer. SME, Course Designer, Trainer, Team Lead using C# and .NET.

Software Developer – various projects using C# and C++.

Website Architect & Developer Electronic Payment Processing - Application Architect and Team Lead using C# and .NET

Database Solutions - Architect and Development Team Lead using MS SQL and Oracle

Quality Assurance Manager Y2K Projects including Canadian Coast Guard Y2K and 407ETR Extensions projects.

Quality Assurance Auditor Y2K Projects

Quality Assurance Trainer In-house and Clients

Project Management on large engagements for Government and Commercial projects including 407ETR Extension Project.

Previs Inc., Toronto, Ontario, Canada

Oct 1997 – Oct 1998

Lead Software Developer

Reverse engineering the Allan Bradley network protocol and developing a PC base replacement for the standard management console. This was developed in C++ and MFC.

Mark IV/FP Electronics., Mississauga, Ontario, Canada

May 1983 – May 1997

Hardware Designer - November 1996 – May 1997

Developed new electro-mechanical display products.

Designed new and adapted existing microprocessor-based systems.

Programmable Logic Design and ASIC performance evaluation and simulation.

Internal Quality Audit Team - prepared for ISO 9001 audit.

Support for earlier hardware and software projects.

Software Designer and Developer - May 1994 – May 1997

As a System Analyst and Programmer, I was responsible for project estimation, design of embedded system operating kernels, development environments, tools, and application software for customer and internal requirements. These projects used C++, but also included C, Forth, Fortran and various assembly language applications. The hardware ranged from PDP-8, VAX, Mac, PC, and custom embedded microprocessor control systems.

One interesting project involved controlling the intensity of light for the fiber-optics for highway traffic signs. This measure multiple inputs including ambient light intensity, line voltage, reference voltages, temperature and others. These were applied to a Fuzzy Logic system to calculate the outputs required to produce the output light intensity. I also used the noise resulting from a badly laid out ground plane to gain an extra 4 bits of resolution for the Analog to Digital convertor.

These roles involved the technical supervision of the software team, coding, and testing of software. Additionally, I provided hardware and software technical support for our products to customers and other departments.

Duties also included supporting Sales in customer engagements with presentations, bid submissions, and pre-sale discussions with clients.

System Hardware and Software Designer - November 1983 – May 1994

As a member of both the Systems and Product Engineering departments, I developed hardware and software for embedded, PC, Mini-computer, and embedded microprocessor systems.

ActMedia, Mississauga, Ontario, Canada

Jan 1990 – July 1992

Consultant, Access Database Developer

Developed various databases and applications used to distribute advertisements and product samples for in-store advertisements and demonstrations in grocery stores.

Pinpoint Retail Systems, Toronto, Ontario, Canada

Jan 1985 – Dec 1986

Embedded Microprocessor Application Developer

At the request of my employer, Mark IV, I continued supporting a client in the development of hardware and software for point-of-sales equipment for gas stations. This included dual slip printers, hand-held purchase authorization terminal, and a kiosk sales terminal and its sub-components. These projects required innovative solutions due to the extremely resource limited single-chip microprocessors used. The software was developed using Assembler.

Welding Institute of Canada, Oakville, Ontario, Canada

Jan 1980 – May 1980

Embedded Microprocessor Application Developer

This was a work-term position as part of my Electrical Engineering studies at the University of Waterloo.

I developed code for an Ultrasonic Weld Crack Detection and Measurement system. This system used an Ultrasonic pulse to probe a weld, using the return time to map the shape of the weld and any cracks. The emitter and detector were rotated around and across the pipe under test using stepping motors. The code was developed in Z80 assembler.

Education

University of Waterloo, Waterloo, ON, Canada

Bachelor of Applied Science – B.A.Sc. Electrical and Electronics Engineering

Professional Affiliations

American Society for Quality (ASQ) - ASQ Certified Software Quality Engineer · Dec 1997 - Dec 2006

Patents

Board For Mounting Display Element - US 5809675 A · Issued Sep 22, 1998

Side Projects

Munq.IocContainer

A high-performance Dependency Injection container written in C#. See the code documentation on [GitHub](#) and [CodeProject Article](#). Over 126K downloads from NuGet.org.

Current Interests

I am currently working on multiple projects of assorted sizes and complexity:

- Semantic Kernel and other .NET and Python AI frameworks
- ASP.NET Blazor
- .Net Aspire.
- Updating old projects to use improvements in the .Net Runtime and Libraries

References

Available on request.