

# Matt Weber

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## CONTACT INFORMATION

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## PROFILE

A dedicated and passionate individual with many years of experience in senior and lead developer roles, able to provide excellent software design and implementation as well as unique solutions for challenging problems.

An inquisitive developer who loves breaking apart existing software and related processes and rebuilding them into something better and more efficient for everyone's benefit. By leading others through teaching and example, the total contribution made to the company is amplified by making it easier for everyone else to do more. Track record demonstrates an extremely high rate of output while working.

In addition to working on .NET software, is also an experienced hacker of software (mainly games) with proficiency in reverse engineering routines and then injecting prepared assembly code into a loaded process to change the program's behavior.

## MY CODE

<https://github.com/BadEcho>

## MY WRITINGS

<https://BadEcho.com>

## PROFESSIONAL EXPERIENCE

**IWCO Direct**, Chanhassen, Minnesota USA

*Software Engineer III*

**Nov, 2020 - Present**

- Architected and currently implementing a new enterprise-wide data layer to be used by the majority of company technologies in order to access data detailing customer requirements for factory production orders.
- Helped create a new approach for hosting company software products as microservices on a centralized platform, a shift away from previous practices which resulted in deployed services scattered around and difficult to maintain.
- Created various developer processes (such as VS project templates) to aid developers in creating these new microservices so that they would be easy to work with locally as well as deploy to the production host.
- Developed an automated provisioning solution for an integral legacy company system made up of many separate services, eliminating problems stemming from human error and effectively cutting the deployment times of said system from an hour to only minutes.
- Lead an effort to patch a large number of security concerns, including many potential SQL injection sites, across critical pieces of company software.

**Bad Echo LLC**, Minneapolis, Minnesota USA

*Owner*

**Feb, 2017 - Present**

- Created a set of technologies and frameworks which overhaul and improve common game-centric systems for entertainment purposes through the insertion of handcrafted assembly code into the loaded process; designed in such a manner that the changes are entirely game-neutral, allowing it to work with almost any software game.
- Published a series of articles on different techniques to reverse engineer and "hack" games as well as implement the frameworks previously mentioned above.
- The hacking process and end results are broadcast for others to watch and learn from on a verified Twitch Partner account on the Twitch live streaming service.

- Currently engaged in developing a new game powered by MonoGame (XNA) on .NET 7.

**MTS Systems Corporation**, Eden Prairie, Minnesota USA

*Software Engineer*

**Jun, 2019 - Oct, 2020**

- Implemented a large number of features, including both user interface and system components, in a new software product responsible for performing stress tests through its operation of large testing rigs that simulate wear and tear on vehicles using recorded road data.
- Solely responsible for the design and implementation of the event handling subsystem of an automobile test suite, which would execute user defined actions in the response to real world events such as unsafe operating conditions, etc.

**Starkey Hearing Technologies**, Eden Prairie, Minnesota USA

*Senior Software Developer*

**Jul, 2017 - Apr, 2018**

- Modernized code and implemented new features in the user interface of a very large software system used by audiologists to configure hearing aid devices during a patient fitting session.
- Worked on porting code from a legacy technology stack to a next generation system responsible for communicating with hearing aid device hardware and configuring the multitude of features made available by said hardware products.

**EMS Software**, Centennial, Colorado USA

*Lead Developer*

**Jul, 2015 - Jan, 2017**

- Led the process of integrating client technology featuring a WPF user interface produced by a development platform developed at a previous company (which was acquired by this one) into the software ecosystem of the acquiring company so it would serve as a replacement for a highly visible client software product being offered at the time.
- Helped in part by the flexibility offered by the development platform, integration of the desired technology with the acquirer's back-end software was successfully achieved.

**Emergingsoft**, Bloomington, Minnesota USA

*Senior Software Architect*

**Jan, 2011 - Jul, 2015**

- Designed and implemented an innovative software system and rapid development platform used as the foundation for new software released as the next version of the company's flagship product. This platform consisted of frameworks purposed for the rapid creation of both client and server products, a powerful WPF user interface architecture, multiple extensible plug-in architectures, and other original frameworks meant to support multiple products.
- Designed and developed a new calendaring web application using ASP.NET, Entity Framework, AJAX, and JSON to replace a legacy web front-end for a meeting scheduling system. This web application allowed users to easily create, view, and edit reservations within the booking system in a manner similar to how one interacts with an Outlook calendar.
- Led the integration of third-party LCD screen technology with the company's meeting scheduling system product by designing an ASP.NET web connector that acted as a bridge between both technologies and then managing a team of developers in their implementation of said designs.
- Managed and participated in the design, implementation, and demonstration of new green technology produced by integrating the company's meeting scheduling system with a widely used building control system in a coordinated effort with the building control system manufacturer's engineers. This allowed the scheduling system to directly affect building controls including AC, lights, and auxiliary hardware such that their use match the use of associated assets (e.g. rooms, conference centers).
- Led the process of integrating support for a major telecommunication provider's system into the

company's meeting scheduling system product.

- Added robust support for the creation of Microsoft installer patches (MSP) into the automated build system, resulting in painless update experiences for customers, as well as mitigating risk for the customer due to the rollback capabilities of this patching technology.
- Created a general-purpose Aspect Oriented Programming framework using C# and PostSharp that streamlines the way various crosscutting concerns are addressed across products such as logging, tracing, error handling. Applications in which the framework has been used exhibit increased code quality, stability and developer productivity.

*Software Developer*

**August 2008 - Dec. 2010**

- Overhauled the complex publishing process of a legacy software product by designing and implementing a fully-automated build system which directly resulted in improved worker productivity and the ability to serve customers faster.
- Created a custom stress testing tool using C# that was used to simulate high traffic load on a meeting scheduling system (through both its client API and ASP.NET web application front-end). This allowed others developers to be able to discover and correct severe performance bottlenecks.
- Maintained a number of legacy software products, fixing hundreds of bugs, increasing overhaul stability, and improving code quality whenever possible through refactoring.
- Designed a packaging and deployment framework that offered the ability to provision automatic updates as well as a powerful Windows Installer bootstrapper written in C++ using the Win32 API. This bootstrapper even featured its own original scripting language for advanced deployment scenario handling.

EDUCATION

**University of Minnesota**, Minneapolis, Minnesota USA

B.Comp.E. (Bachelor of Computer Engineering) June 2008

EXPERTISE

- Design: Microservices architecture as well as large n-tier architectures whose implementations are used by high numbers of concurrent users
- Languages: C#, C++, x86-64 Assembly (using up to the AVX2 Instruction Set), LUA, among others
- Reverse Engineering: Experienced with dynamic and static analysis of a number of different kinds of software components, many times with the goal of affecting changes onto a particular piece of software in order to meet requirements
- Frameworks and Technologies: .NET 7 as well as older Framework versions, Blazor, WPF, MEF, WCF, PowerShell, PostSharp, WiX, ASP.NET Core, COM, ATL, among others
- Tools: Visual Studio 2022, Visual Studio Code, WinDbg, Expression Blend
- Database Related: MSSQL, some database design and ORM usage like NHibernate and Entity Framework