Sean Werkema

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Goal

I want to design and build useful, high-quality software with a team of talented, dedicated, and smart colleagues. I'm looking for a principal-level or senior-level software-engineer, architect, or lead role where my decades of experience writing millions of lines of code can make a positive difference.

Technologies & Skills

- **Languages:**
  Preferred: C#, TypeScript, Python, or C++.
  Highly-skilled: C#, C, C++, Python (3+), JavaScript, TypeScript, assembly (x86, x64), SQL (MySQL, PostgreSQL, MS SQL), HTML, CSS, regexes.
  Also some: Ruby, PHP, Perl, VB.NET, Lisp, Scheme, Lex & Yacc, Pascal, BASIC, assembly (ARM, SPARC, 68K, 6502), shell script, Makefiles. And some Java.

- **Frameworks & Libraries:**
  .NET: .NET (Framework 2-4, Core 1-3, .NET 5), ASP.NET WebForms/WebAPI/MVC, OpenTK, ADO.NET, WinForms, P/Invoke, JSON.NET, Dapper, Jint, NUnit, MS Test, Polly, StackExchange Redis.
  Python: MyPy (strongly-typed Python), Flask, FastAPI, SQLAlchemy, PyTest, PyLint
  JavaScript/TypeScript: ReactJS (+ecosystem), jQuery (+ecosystem), NPM, Yarn, GraphQL, Babel, WebPack, "no framework" JS and the DOM, BabylonJS, and lots of other JS packages, modules, and libraries.
  Others: OpenGL, Zlib, Oniguruma, Boehm GC, Intel Binary Decimal library, GD2, IJG JPEG, STB graphics, GMP math, DirectX, LibPNG, MFC, COM, and more.

- **Platforms/OSes:** Linux (since v1.1), Windows (3.x to 10), Browser DOM (1.0 to IE to evergreen), WSL (1 & 2).
- **Development Environments:** Visual Studio (VC98 to VS22), VS Code, JetBrains Rider, Git, GCC (1.0 to current) + Make, Vim + Unix terminal, Subversion.
- **Data Stores:** SQL, Redis, AWS S3, Couchbase
- **Algorithms & Concepts:** Trees and graphs, compression, optimization, encryption, security, design patterns, antipatterns, fuzzy pattern matching, search engines, Unicode, compilers, lexical analyzers, parsers, code generators, memory allocators, garbage collectors, image processing, 3-D graphics, shaders, and a lot more.

Employment History

2021-2023: IAM Robotics LLC (www.iamrobotics.com)

- *Principal Software Architect*: Designed IAMR's core cloud software architecture. Designed, diagrammed, documented, and implemented their system-wide security model, data-storage model, and robot communications model. Gave daily technical guidance to many of the software teams. Designed and implemented a unique solution for warehouse coordinate mapping. Designed and implemented high-performance cloud-based graph-planning and graph-analysis logic. Designed and prototyped multiple automated planning systems. Designed and implemented sophisticated simulation and visualization tools for testing, analyzing, and monitoring fleets of warehouse robots.

2019-2021: Suvoda LLC (www.suvoda.com)

- *Principal Software Developer*: Designed, architected, and implemented large parts of a new "platform" ecosystem. Created compilers for productivity-boosting DSLs and code generators used by every backend development team. Architected and implemented large parts of Suvoda's Universal API service and their Modularity runtime for dynamic service creation and management. Directed teams to design efficient backend SQL schemas. Helped the UI team to bring an overdue frontend project to completion.

2009-2019: HomeNet Automotive (Cox Automotive) (www.homenetauto.com)

- *Principal Software Engineer (2015-2019)*: Helped decompose HomeNet's flagship product *IOL*, by redesigning its monolith to become cloud microservices. Designed, documented, implemented, and instructed in major refactors and enhancements. Trained team on new techniques and tools with custom coursework. Implemented a new Redis-based data store for IOL's most critical processing load.

- *Team Lead (2015)*: Led a small development team to develop a highly successful new product, *AIS*. Designed the UI and backend architecture for it. Mentored team members, reviewed work, and helped with the hardest coding under tight deadlines.

- *Senior Developer (2012-2014)*: Optimized backend and frontend performance of IOL. Led team in enhancements. Designed and documented architectural changes. Trained team on new techniques with custom coursework. Built dozens of new products.

- *Frontend Developer* and *Frontend Lead Developer (2009-2012)*: Designed architecture and implemented frontend UI for IOL. Created company UI standards. Enhanced ASP.NET with custom tools and components to improve productivity of frontend team.

2006-2009: *Founder & President,* **Sixty-Five Software**

Designed, implemented, and supported its flagship product, SpaceMonger, a data-analysis-and-visualization program. Supported customers, resolved bug reports, distributed upgrades and enhancements. Licensed the technology to StarDock.

1996-2008: *Freelance website designer and programmer*.

Created and maintained custom Web sites under contract, using PHP and CGI.

1993-1997: *IT support,* **Arkema** (www.arkemagroup.com)

Installed, configured, repaired, and trained employees on computers and software for the North American headquarters of Arkema, a large chemical corporation.

Honors & Notables

- Knuth Reward Check recipient for *The Art of Computer Programming, Volume I*.

- Regular contributor to open-source projects, including writing large amounts of documentation for Oniguruma, and writing one of the OpenTK libraries.

- 5,500 reputation on StackOverflow.

- Multiple innovation awards and hackathon winner at HomeNet Automotive.

Education

Pennsylvania State University, State College, PA
Bachelor of Science in Computer Science

* US citizen * References available upon request *