

Howard Stearns

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EDUCATION

Massachusetts Institute of Technology

Cambridge, MA

B.Sc. Ocean Engineering
B.Sc. Electrical Engineering

1986
1987

EXPERIENCE

Lead Engineer

High Fidelity, San Francisco, CA

2015-present

I am responsible for the blockchain economy, high-concurrency servers, personal safety, social services and business services of this industry-leading virtual-worlds R&D startup. We use head-mounted displays and low-latency controllers to create a next-generation, large-scale metaverse for remote-work, creativity, education, and play.

Senior Developer / Lead

Shocase, San Francisco, CA

2014-2015

This social network for marketing professionals automatically suggests individual pre-loaded portfolios for new members. I prototyped, architected, and deployed the system with 100k portfolio projects identified and processed from the Internet.

Senior Developer / Lead

TuneUp Media, San Francisco, CA

2011-2014

Working closely with product management, I architected a system that automatically corrects metadata in the music collections of 9 million users.

Senior Application Lead

HP WebOS (Palm), Sunnyvale, CA

2011

I delivered a new tablet app using Palm's first test-driven development process, and led the team for the release of Palm's most complex and visible mobile app: email.

**Member of the Technical Staff
Lead Developer**

*Teleplace (Qwaq), Redwood City, CA
University of Wisconsin, Madison, WI*

**2007-2011
2004-2007**

The Croquet Project was convened by computing pioneers Alan Kay and David Reed to advance 3D virtual worlds for real-time, persistent collaboration. I led the development team at UW before joining the enterprise commercialization, Teleplace. My direct accomplishments include the first end-user installations, an interactive authoring language for non-programmers, avatar animation on business-class computers, and (iOS, Blackberry, Android) apps that allowed mobile users to participate in collaborative meetings with shared applications and multi-media.

Technology Strategist

Curl, Cambridge, MA

1999-2002

Curl was an MIT startup created by Tim Berners-Lee that created the rich internet architecture model of Web apps. I identified and articulated technical and competitive strengths, defining product positioning, products, and demos. I wrote the formal language specification and the systems to produce it.

Technology Director

Elwood, Oak Creek, WI

1992-1999

Elwood is a small industrial firm with products in electronics, hydraulics, and robotics that transformed the artificial diamond market. My group created micro-controller firmware, factory automation, realtime controls, programmable logic controllers, and Web catalogs. I also created the Eclipse ANSI Common Lisp system, including compiler, object system, complete portable standards-conforming system library, test suite, and documentation.

**Applications Consultant
Manager Of Applications**

*Engineering Intent, Waltham, MA
ICAD, Cambridge, MA*

**2003-2004
1987-1992**

ICAD was an expert system startup for 3D mechanical engineering that spawned an IPO, three spin-offs and sale to Oracle. Engineering Intent was a spinoff that was purchased by Autodesk. I created the application group that produced 13 products that integrated the system with seven different CAD systems.

SKILLS

Major works in Smalltalk, Objective-C, Lisp, Javascript, Node.js, C, C++, native plugins, Unity, iOS, QML, specifications, documentation, unit testing. Minor works in Cg shaders, Python, Java, XSL, CSS. Industry experience in consumer products, enterprise, mobile, media, 3d systems, social networks, blockchain, large-scale data, realtime distributed systems, full-stack, industrial systems, embedded systems, expert systems, SQL and no-SQL databases, and startups.

PUBLICATIONS

Blog: [wetmachine:Inventing the Future](#), including:

“[Mostly Reliable Performance of Software Processes by Dynamic Control of Quality Parameters](#)”, 2011, and “[Controlling Time](#)”, 2011, a seven part survey of the overall accomplishments of the Croquet Project and the key insights that made it possible. Also <https://www.highfidelity.com/blog/author/howard-stearns>

Howard Stearns, Joshua Gargus, Martin Schuetze, and Julian Lombardi. “[Simplified Distributed Authoring Via Component-based Object Construction and Deconstruction in Collaborative Croquet Spaces](#),” and “[A Language Supporting Direct Manipulation of Component-based Object Construction and Deconstruction in Collaborative Croquet Spaces](#),” in Proc., Fourth Conference on Creating, Connecting, and Collaborating through Computing (C5 '06), IEEE Computer Society Press, 2006.

Rieko Kadobayashi, Julian Lombardi, Mark McCahill, Howard Stearns, Katsumi Tanaka, and Alan Kay. “[Annotation Authoring in Collaborative 3D Virtual Environments](#),” and “[3D Model Annotation from Multiple Viewpoints for Croquet](#),” in above and in Proc., 15th International Conference on Artificial Reality and Telexistence (ICAT '05). The Virtual Reality Society of Japan, 2005.

[Croquet@UW Newsletter](#). Volume 1. 2006-2007.

"Curl Language Specification." Curl Corp. internal memo, 2001. 664 pages, including rationale, language comparisons with Java, C++ and others, and extensive cross-index.

“[A Whirlwind Tour of Curl Technology for the Web](#),” in Lightweight Languages Workshop CD-ROM. Dr. Dobb's Journal workshop CD, 2002.

“[Lisp/C Integration in Eclipse](#),” in Proc., 40th Anniversary of Lisp Conference, Berkeley, CA, 1998. “[Eclipse Product Documentation](#).” Elwood Corporation, 1997.

“Designing a Knowledge Based Ship Design System,” in Proc. 4th International Marine Systems Conference, Kobe, Japan, 1991.

OPEN SOURCE

High Fidelity: <https://github.com/highfidelity/hifi>

GitHub: <https://github.com/howard-stearns>

Qwaq/Croquet: <http://code.google.com/p/openqwaq/>

Eclipse Common Lisp: <https://github.com/blakemcbride/eclipse-lisp>

BOARD MEMBERSHIPS

Pre-school: Little City Kids , Franksville, WI and San Mateo, CA	1998-2015
Non-Profit: Collaborative For Croquet, Waunakee, WI	2006-2007
Public Policy: Citizens for Responsible Energy, Waunakee, WI	2006-2007
International professional organization: Association of Lisp Users	1997-2002
Commercial real-estate: Third Little Pig, Franksville, WI	1998-2000
Bookpublishers' production services: City Desktop Productions, Franksville, WI	1990-2000