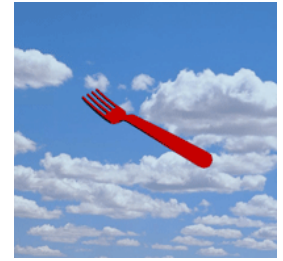


Simon Greenwold

Sr. Engineering Manager
Architect
Developer

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Objectives

To lead brilliant teams to create exceptional software products. To do something beyond what I've already done. To practice engineering as an art. To continually develop process and product without settling into comfortable ruts. To help keep an organization vibrant and healthy by fostering sufficient change and growth to provide constant renewal. To contribute to a group that is open to honest reflection and self-awareness. To find and work among the best, most creative, and talented people in the world.

Experience

16 years managing developers, 9 years managing managers

2020 - present
Senior Engineering
Manager

2008 - 2020
Engineering Manager

2006 - 2008
Senior Team Lead

2005 - 2006
Principal Software
Developer

2004 - 2005
Senior Software
Developer

MathWorks, Inc., Natick, MA (makers of MATLAB & Simulink)

I built and now lead the constellation of teams with responsibility for the diagram editors, front ends, and UI building platforms for the graphical languages Simulink and Stateflow. These are the core diagram editors and user interfaces driving a \$200M suite of products for Model-Based Design and Systems Engineering. Simulink simulations and generated code enable nearly every modern spacecraft, airplane, and automobile.

Organizational contributions

- Built and run an organization comprising seven teams in the US and India
- Mentored and directed scores of developers and managers over the years as my role has grown from an individual contributor to area lead
- I serve on multiple advisory boards including ones overseeing core application architecture, development processes, and standards.
- Developed customized processes and tools to eliminate overhead and streamline development
- Responsible for generating and communicating area-wide long and mid-term strategy

Technical contributions

Beyond the countless features, systems, and technologies that teams in my area develop, I have

- Led and shipped a complete rewrite and unification of the Simulink and Stateflow editors and their "Studio" environment. An enormous years-long effort spanning multiple teams. I learned a great deal about how to manage large development efforts. (<https://www.upfork.com/ue>)
- Started a cross-language data modeling framework that now serves as the de-facto starting point for most new features in MathWorks' \$1.3B portfolio.
- Developed a 2d C++ scene graph for diagram rendering and interaction.
- Designed a dynamic graphics system in JS/SVG for implementing rich, interactive block icons.
- Established a view-model-based UI framework to move C++/Qt UIs to JS/HTML without requiring our hundreds of clients to rewrite their code.
- Produced a "web-diagram" framework for JS/HTML diagram editors with C++/MATLAB backends.
- Oversaw the transition from menus and toolbars to a complete JS/HTML "toolstrip" exposing and organizing over 1,200 product actions.
- Led the construction of a Class Diagram editor for MATLAB classes and packages
- Initiated the teams and technology now bringing Simulink and Stateflow to online workflows
- Simplified software component management with a "component generator," and code forensics with a submission search tool that are used throughout the company.
- I still submit C++, MATLAB, and JavaScript code and tests regularly but am careful not to put myself on a critical path.

2003 - 2004 Software Developer	MetaServer, Inc., New Haven, CT Worked with a small team of developers on a visual data-flow mapping product. (Java, Swing, JSP)
Fall - Spring 2003 - 2004 Lecturer	Yale University School of Architecture, New Haven, CT Developed and taught two highly rated classes in computational design for MArch grad students
1997 - 1999 High School Teacher Track Coach	Friends Seminary, New York, NY Taught high school AP Computer Science, Geometry, American Literature, and Creative Writing; coached track team; advised student newspaper; taught 5/6th grade drama.
1995 - 1997 Software Developer	Bloomberg, LP, New York, NY Authored a financial commodity spreadsheet application and user interface that updated in real-

Education

2001-2003 Masters of Media Arts and Sciences	Media Lab, Massachusetts Institute of Technology, Cambridge, MA As a researcher in John Maeda's Aesthetics + Computation Group, I designed and developed systems for human-computer interaction. I implemented AR 15 years before it became easy. Thesis entitled "Spatial Computing." http://acg.media.mit.edu/people/simong
1999 - 2001 Candidate, MArch	School of Architecture, Massachusetts Institute of Technology, Cambridge, MA I completed two years of the Masters of Architecture program before leaving to become a researcher at the Media Lab.
1991 - 1995 Bachelor of Science	Yale University, New Haven, CT Double-majored in English & Applied Math with a concentration in Computer Science. Cum laude, Distinction in both majors

Skills

I was a child programmer (BASIC → 6502 Assembly → C → C++ → Java), so I eat and breathe languages, technologies, idioms, and architectures. The rest I learned on the job.

Organizational

Hiring; mentoring; working smoothly with a cross-functional team including QE, UX, Doc, Marketing; project management; prioritization; organizational alignment; restructures; negotiation; business and technical strategy; agenda-setting; developing metrics; picking battles; playing the long game; performance management; unhiring.

Technical

Development	Software development lifecycle, Agile/Scrum, developing requirements, testing, UML, OOD/A, desktop systems architecture, UI design patterns, async programming, functional style
Tools	Git, Perforce, webpack, gmake, CMake, Maven, npm, Visual C++, VSCode, PlantUML, MagicDraw
Languages	Current: C++, JavaScript, MATLAB, HTML/CSS Historical/Hobby: Java, Ruby, SQL, C, Fortran, Scheme, Scala, Haskell, Pascal, BASIC, Assembly Learning now: TypeScript, Go, Dart
Frameworks	Current: Qt, DOM + HTML Custom Elements, NodeJS Historical/Hobby: React, Redux, Swing, jQuery, MFC, iOS, Flex, Electron Learning now: Flutter
Data stores	Historical: Sqlite, MySQL, Postgres, MongoDB, Redis Hobby: Neo4j, Arango
Libraries & APIs	STL, Boost, Qt, OpenGL, Processing, VTK, OpenCV, IPP, TBB, ANTLR, countless npm packages
Distributed systems	Learning now: System design, Docker, Kubernetes, Kafka, Zookeeper, Spark, etc.

Everything else

Running (qualified for the Boston Marathon and ran it in 2019), gardening, cooking, reading, writing

Statement

You may not see experience with some areas you were hoping to. Chances are, I'm applying for a job that builds on rather than replicates my previous experience. That's because I want to continue to learn and grow both technically and operationally. As a hiring manager, I know how much more difficult it is to determine a candidate's capacity for growth than their existing expertise. What sets me apart is not what I'm already expert in, but how quickly I become expert in new paradigms, technical or otherwise. I commonly become a go-to resource for systems or processes I started working in only recently. My fundamentals are solid enough, broad enough, and deep enough that I have a framework to integrate almost anything that comes.

When software systems are designed and executed well enough, the emergent behaviors can be almost magical. That's the pursuit that keeps me going.