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ABOUT ME

I am a Digital Media Technologist with broad experience building digital media platforms. My background is deeply technical with a focus on business. I contribute on many levels: Strategy, technical, management, operational, product and business.

I'm passionate about digital media, and have a strong drive for my work to be meaningful both to customers and the business.

I have a proven track record of developing, delivering and supporting revenue-generating digital media products.

EDUCATION

- BSc in Physics, California Polytechnic State University; San Luis Obispo, CA
- Course work in Computer Science from University of California, Berkeley
- Paid researcher at Stanford CCRMA 1994-1996 (Sondius Program)
- Professional Sequence in DSP from University of California, Berkeley (2004). Developed an [MP3 Layer-1 Encoder/Decoder](#) as a class project.

PRODUCTS

- Over the past 7 years Liquid developed many different digital media platforms for Walmart.com. This includes several different "a la carte" music stores with and without DRM, in-store and online custom CDs, various code-based promo systems, and a video-on-demand (VOD) system.
- Staccato's SynthCore-OEM is a part of the Analog Devices "SoundMAX" product. **I co-developed SynthCore-OEM, as well as managed the development team.**
- Staccato's SynthCore-SKD is found in a number of games, including Electronic Art's NASCAR-Revolution and NASCAR-2000. **I co-developed SynthCore-SDK, as well as managed the development team.**

SKILLS

Software Development	Engineering Management
Audio Programming, DSP Programming, Windows Media and DRM SDKs, C/C++/Objective-C, MATLAB, Java, JavaScript, Perl, Tcl/Tk, ASP, VB, Lex/Yacc, Windows (Win32/WinCE) Programming, MacOSX/Cocoa Programming, Unix/Linux Programming, System Architecture, Development Environment Setup, Engineering Process Automation, Whitebox Test Development, Documentation	Product Development Management Engineering Team Bootstrapping Process Assessment and Development Development Environment Design Requirements Analysis Project Scheduling Resource Cost and Allocation Planning Customer Relationships (Technical) Internationalization Technical Diligence

WORK EXPERIENCE

10/2003 – Present: *Liquid Digital Media (Formerly Liquid Audio)* VP of Technology.

For the past seven years, I've worked at Liquid Digital Media (formerly Liquid Audio). Liquid is the first legal music download service, and for the past seven years we have powered all of Walmart.com's digital music properties end-to-end. This includes several different "a la carte" music stores with and without DRM, in-store and online custom CDs, various code-based promo systems, and a video-on-demand (VOD) system.

Initially my role at Liquid was Technologist. For the past five years I've directly run Liquid as its VP of Technology. Under my aegis we completely re-implemented all of our systems front-to-back and launched the first DRM-free MP3 download service (March 2008) (<http://mp3.walmart.com>). As VP of Technology, I contribute on many levels: Strategy, technical, management, operational, product and business.

I'm currently driving the development of a next-generation "Music in the Cloud/Digital Locker" service.

4/2001 – 10/2003: *Jarrah Consulting* - Software Engineering and Management, Digital Media Appliance Developer.

Jarrah, my sole proprietorship, has provided a variety of development and engineering management services for companies developing Digital Media Products. Jarrah developed business plans for a number of Digital Media products (see <http://www.scandalis.com/Jarrah/PhysicalModels/index.html#Jarrah>) including:

- A Digital Media Appliance (Home Theater PC with customizations) that was designed with a unique cabling interface.
- A prototype for a Time-Shift-Radio application that used acoustic fingerprints to identify content recorded digitally from terrestrial radio. This product allowed a user's computer to simply listen to the radio to build a music collection.

8/2000 – 4/2001: *TuneTo.com* – Member of the Technical Staff, VP OEM Software (*TuneTo.com sold to Listen.com 4/2001*)

At TuneTo.com, I was the VP of OEM software. TuneTo's work eventually evolved to be what is today known as Rhapsody.

- I productized TuneTo.com's Internet Radio SDK. The work consisted of performance and memory tuning, writing all documentation, developing white-box tests, setting up automated build-and-test systems, finalizing SDK packaging.
- I focused engineering efforts on delivering the TuneTo.com Internet Radio Receiver to new markets on embedded platforms.
- I co-ported a predecessor of Rhapsody to a Windows CE mobile platform. I tested this by driving up and down highway 101 and playing music from the mobile device. As far as I know, this was the first example of a mobile music service.
- I developed TuneTo.com's Technical Diligence Package as a part of TuneTo.com's acquisition by Listen.com. I developed 1500 pages of documentation for all portions of the TuneTo.com software stack.

10/94 – 7/2000: *Stanford University/Staccato Systems (Staccato Sold to Analog Devices, 1/2001)* – Stanford Researcher, Staccato Founder, Staccato Board Member, Vice President of Engineering

Staccato Systems was a Digital Audio Startup that was spun out of research done at Stanford University's Lab known as [CCRMA](#) (Center for Computer Research in Music and Acoustics). The research was undertaken with funding from Stanford's Office of Technology Licensing ([OTL](#)) in order to create realizations for a suite of audio patents. At Stanford the research project was known as Sondius. The following article from "Stanford Today" describes the founding of Staccato (<http://scandalis.com/Jarrah/Documents/StanfordArticle.pdf>)

Staccato developed an audio subsystem for the PC that replaced a \$27 wavetable chip on sound cards and also was used to create unique audio effects in PC games. This audio subsystem was licensed by AC97 Codec manufacturers SigmaTel and Analog Devices (used in SoundMAX). The audio subsystem was also licensed by Electronic Arts for use in their Nascar line of PC games. Staccato Systems was funded at \$6M and in 2000/2001 was sold to Analog Devices for \$30M.

I co-wrote the business plan for Staccato and went to Japan to secure initial funding (\$1M) from Yamaha. For the first year, Staccato Systems operated in my garage.

- I bootstrapped the Software Engineering Organization; hired and managed the Engineering staff of 15; managed customer/investor contacts; co-developed product plans; set up the development infrastructure and developed the internationalization strategy.
- I wrote one third of the code for Staccato's SynthCore product, notably the SDK and the audio model interchange format known as SynthScript.
- I delivered on initial investor milestones that led to a second round of funding.
- I delivered Staccato's SynthCore-OEM product that generated \$1.5M in annual revenue (90% of Staccato's revenue).
- I managed the OEM engineering relationships with audio AC97 Codec manufacturers SigmaTel and Analog Devices.

3/96 - 6/96: Aural Semiconductor – Contractor

Worked on programming the Aural 301 waveguide chip.

9/93 to 9/94: Sun Microsystems - Manager Test and Validation tools (UltraSPARC)

Managed the Test and Validation Tools groups (9 headcounts) as a part of Sun's high-end 64bit microprocessor project (UltraSPARC). These tools groups crafted many of the tools that were used to verify the UltraSPARC design, including the design of the UltraSPARC TAP controller and Design for Test methodology, tools for managing all aspects of system validation, and the implementation of DReAM, a tool for distributing validation simulations into a farm of nearly 1000 Sparc Stations.

9/90 - 9/93: Apple Computer - Manager/ Engineer Design Automation Tools, RISC Products group (PowerPC)

Managed and contributed to the Apple RISC products (PowerPC) Design Automation Tools group. Managed 9 head counts plus a \$1.0 million head count budget and a \$1.8 million dollar capital equipment budget. I staffed the group with 6 engineers and 2 contractors. This group was responsible for Design Automation efforts that contributed to Apple's PowerPC system designs. This included the simulation environment and portions of the design verification; cosimulation with the IBM 601 compiled code simulator using the VCS (Chronologic) simulator; the Design for Test (DFT) and Automatic Test Methodology (ATPG) as well as delivering 98% coverage test vectors for all ASICs; the layout of Gate Array chip designs; the network computing environment; the tools process. The Design Automation Tools group represented a new way of doing hardware design at Apple.

PATENTS

5,742,532: April, 21, 1998. Van Duyne; Scott A. (Stanford, CA), Jaffe; David A. (Berkeley, CA), Scandalis; Gregory P. (Mountain View, CA), Stilson; Timothy S. (Mountain View, CA) "**System and Method for Generating Fractional Length Delay Lines in a Digital Signal Processing System.**"

6,959,094: Oct 25, 2005. Cascone; Kim (Pacifica, CA), Petkevich; Daniel T. (San Jose, CA), Scandalis; Gregory P. (Mountain View, CA), Stilson; Timothy S. (Mountain View, CA), Taylor; Kord F. (San Jose, CA), Van Duyne; Scott A. (Palo Alto, CA) "**Apparatus and methods for synthesis of internal combustion engine vehicle sounds**"

PAPERS

"SynthBuilder: A Graphical Rapid-Prototyping Tool for the Development of Music Synthesis and Effects Patches on Multiple Platforms", Nick Porcaro, David Jaffe, Pat Scandalis, Julius Smith, Tim Stilson, and Scott Van Duyne, Computer Music Journal, Volume 22, Number 2, pp. 35 - 43, MIT Press, 1998.

[“A Lossless, Click-Free, Pitchbend-able Delay Line Loop Interpolation Scheme”](#), Scott A. Van Duyne, David A. Jaffe, Gregory Pat Scandalis, Timothy S. Stilson, 1997 International Computer Music Conference, Greece, 1997.

[“SynthBuilder and Frankenstein”](#) N. Porcaro, W. Putnam, P. Scandalis, T Stilson, D. Jaffe, and J. O. Smith, S. Van Duyne, ICAD 1996.

[“Work in Progress, SynthScript and SynthServer”](#), P. Scandalis, David Jaffe, CCRMA Affiliates Presentation 1996.

[“SynthBuilder: A Rapid-Prototyping Tool for Sound Synthesis and Audio”](#), Nick Porcaro, Pat Scandalis, Julius Smith, 1996 Presented at Berkeley EE seminar.

[“Using SynthBuilder for the Creation of Physical Models”](#), N. Porcaro, P. Scandalis, D. Jaffe, and J. O. Smith, 1996 International Computer Music Conference, Hong Kong. 1996.

[“SynthBuilder Demonstration, A Graphical Real-Time Synthesis, Processing and Performance System”](#) “ Nick Porcaro, Pat Scandalis, Julius Smith, David Jaffe and Tim Stilson, 1995 International Computer Music Conference, Banff. 1995.

[“Lexical Mapping of Identifiers in a Netlist Generation Procedural Interface”](#), Submitted ICCAD 1990.

“NETGEN, a Procedural Interface for Netlist Generation”, Submitted European Teradyne Users Group 1990.

[“EDIFTRAN, an EDIF Netlist Reader for Teradyne EDA DA Systems”](#), Teradyne Users Group, 1990.

[“An Implementation of an EDIF Netlist Reader Using LEX and YACC”](#), EDIF Users Group, 1988.

AWARDS

[SynthBuilder wins Grand Prize in Second International Music Software Competition](#), Bourges, France, 1997

PROFESSIONAL AFFILIATIONS

Audio Engineering Society (AES)
Institute of Electrical and Electronics Engineers (IEEE)
Association for Computing Machinery (ACM)
National Association of Music Merchants (NAMM)
International Computer Music Association (ICMA)

References provided on request.