



David S. Howell

Testifying Software Development Expert

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Tech entrepreneur and former Apple engineering manager. 35+ years in software development and engineering management, including mobile apps, desktop apps, app servers, and software as a service.

EXPERT HISTORY

Assisting legal teams with software cases since 2017

- High-profile cases involving Apple, Amazon Web Services, Eli Lilly, Intuit, ByteDance, Alarm.com
- Six depositions and testimonies in Federal court and arbitration court
- 19 declarations, expert reports, and rebuttals in 18 cases, including five PTAB IPRs
- Contract disputes, patent infringement and invalidity, trade-secret misappropriation
- Claim constructions, expert opinions
- Source code inspection
- Research into prosecution history and prior art

CREDENTIALS

George Washington University, School of Engineering and Applied Science

Doctor of Engineering in Artificial Intelligence and Machine Learning, exp. 2026

Washington University at Saint Louis, School of Law

Master of Legal Studies with Certificate in Intellectual Property and Technology Law, exp. 2024

Portland State University, Maseeh College of Engineering and Computer Science

MS, Computer Science, 2022, 4.0 GPA

Cornell University, Johnson Graduate School of Management

MBA, 2008

Queen's University, Smith School of Business

MBA, 2008

Case Western Reserve University, School of Graduate Studies

National Merit Scholarship, Tau Beta Pi, Phi Beta Kappa, Mortar Board, Phi Mu Alpha Sinfonia.

BS, Computer Science and Engineering with High Honors, 1986

BA, Music with High Honors, 1987

Amazon AWS Certification, Amazon Web Services Cloud Practitioner

PATENTS

- US 10,706,815 Accelerated secondary display system
- US 10,163,422 Accelerated secondary display system
- US 9,058,759 Virtual display device drivers compatible with Windows display driver model
- US 7,643,037 Method and apparatus for titling by applying effects to computer-generated characters
- US 7,594,180 Method and apparatus for titling by presenting computer-generated characters
- US 8,694,888 Method and apparatus for titling
- US 7,199,805 Method and apparatus for titling
- US 7,483,041 Method and apparatus for titling

PROFESSIONAL EXPERIENCE

Avatron (2008–present)

Founder & CEO

Bootstrapped startup funded entirely by app sales, developing innovative hardware and apps for iOS, Android, macOS, and Windows

Hired 50–60 highly skilled employees and contractors to create and sell \$14M of apps to 3M customers, fueled by a culture of solving the harder problems, love of design elegance, geeky camaraderie, and a fierce respect for customers' time and productivity.

PRODUCTS

- **Air Display:** patented app that turns an iPad, Android tablet, Mac, or PC into an extra display for a host computer. #2 top-grossing iOS Utility app. \$9M+ sales over 7 years.
- **Air Sharing:** document management and remote file access app. Apple's first App of the Week and #1 top-downloaded iOS app, was installed on 20% of all iPhones after a million downloads in its first 2 weeks. \$4M+ sales over 5 years.
- **True Display:** patented hardware adapter that turns a tablet into a Mac/PC monitor.
- **Air Connect:** tunnels to remote Mac for screen sharing or file sharing. Launched on Kickstarter.
- **Air Dictate:** enabled voice dictation on a Mac via an iPhone mic, before Apple launched Siri for Mac.
- **Print Sharing:** prints documents to shared printers, using an embedded CUPS client.
- **Avatron Publishing:** 50+ apps built with licensed media.
- **App Group:** contract development services for productivity and healthcare apps.

Negotiated and performed engineering contracts. Clients included Samsung and Intel.

MyGoDoc (2020–2021)

Chief Technology Officer

Startup developing telehealth software

- Led software engineering, IT, UX/UI design, quality assurance, project management, and customer support.
- Managed internal and overseas software design and development.
- Worked with executive team to define vision, pursue mission, and achieve strategic goals.

Perfect Company (2019–2020)

Vice President of Engineering

Startup dedicated to reimagining kitchen workflows

- **AIM:** Advanced ingredient management system to forecast ingredient preparation requirements and guide kitchen staff through recipe completion, including control of connected appliances, with a focus on data reporting and analytics.
- **PUC:** Mobile app, web API for point-of-sale integration, and connected cabinets for secure food delivery.
- **Perfect Bake, Perfect Drink:** Patented consumer apps that control a connected digital scale, for precise baking and cocktail mixing.
- **NutriBullet:** App that controls a patented connected blender, available from Costco.

Apple (2002–2008)

Senior Engineering Manager, Pro Apps

A leader in technology and design, enhancing everyday experiences

Contributed to engineering in Final Cut, Motion, LiveType, Keynote, Pages, iWeb, Numbers, and Aperture.

Managed the *FxPlug* plug-in architecture for visual effects in professional film & video production apps.

- Developed and documented the *FxPlug* framework and SDK.
- Supported third-party and internal *FxPlug* developers. Hosted developer kitchens.
- Guided internal Apple teams to integrate *FxPlug*, Core Image, and After Effects plug-in support into Pro Apps suite, including Final Cut and Motion.

Managed the LiveType engineering team.

- Led engineering team to turn my India Pro animated-fonts technology into an Apple app.
- Coordinated the human and visual interface teams with engineering to refine user experience.
- Invented and implemented support for animated vector-based LiveFonts.

Pablo Media (1994–2002)

Founder & Principal Engineer

Boutique custom software engineering firm with 20+ clients, specializing in games and creative tools

Negotiated 30+ software development contracts. Led a network of engineers to fulfill the contracts, while building a platform for media-creation and image-processing apps. IP acquired by Apple in 2002.

SELECTED CLIENTS

Prismo Graphics: Co-designed and wrote *India Pro Special Effects Titler* (predecessor of Apple's LiveType), an animated titling app for film and video, with animated fonts, scripted special effects, live video preview, and movie compositing. Helped prepare for Apple acquisition. Wrote all code for macOS and Windows.

Sarnoff Corporation: Developed VideoBrush Panorama, a macOS app that seamlessly tiled panoramic images from live video capture, using advanced pixel-flow algorithms.

Lucasfilm, Iomega, Videonics, Xaos Tools, DigiEffects, Burnett Group, Stomper, AVerMedia, PicoStar: Developed serial and USB drivers, image-processing plug-ins and components for QuickTime, Director, Photoshop, and After Effects. Designed and developed video capture, playback, and editing applications. Hasbro, Zombie, Westwood Studios, Realtime Associates: Ported games to macOS and Sony Playstation. Titles: Candy Land Adventure, Tonka Construction Site, Locus, Young Blood, and Legends of Kyrandia.

New Video, MetaCreations, Passport, Digitalk (1988–1994) **Lead Software Engineer**

First four jobs, developing tools for composers, video producers, and developers, on the bleeding edge of digital technology

- Led a software engineering team at the first joint venture funded by Apple and Intel, to create the *EyeQ* hardware and software for full-screen 30-fps video playback, before Apple launched QuickTime.
- Ported Intel's *Indeo* video codec to macOS, under contract to Intel.
- Wrote music composition apps for macOS and Apple IIgs when MIDI was exciting and new, and received *Electronic Musician's* Most Innovative Software Product award for *Master Tracks Pro 4*.
- Led macOS engineering for the *Smalltalk/V Mac* development environment.

SPEAKING ENGAGEMENTS

Invited Speaker

- Apple WWDC
- National Association of Broadcasters
- American Film Institute Digital Media Studies
- One More Thing Melbourne
- CocoaHeads
- Voices that Matter Philadelphia
- Oregon Entrepreneurs Network: Pub Talks
- Oregon Entrepreneurs Network: CEO Panel
- Pacific Crest Mosaic Vail Summit
- Data Management Association
- Innovations Mobile
- REAP
- Portland MUG
- Clark County PubTalks
- Mobile Portland
- AltWWDC
- University of Phoenix Entrepreneur Panel

Guest Lecturer and Teaching Assistant

Portland State University

- Computers, Sound, and Music
- Computer Science Senior Capstone I & II
- Competitive Strategies
- Introduction to Database Management Systems
- Management of Engineering and Technology

AVOCATIONS

Member, Patent Trademark & Copyright Section, *Bar Association of Metropolitan Saint Louis*

Advisory Board Member, *MyGoDoc*

Advisory Board Member, *Swag'r Digital Media*

Advisory Board Member, *Bizmati*

Board Member, Chair of Entrepreneur Services committee, *Oregon Entrepreneurs Network* (two years)

Board Secretary and Co-founder, *Jazz Society of Santa Cruz County* (four years)

- Helped to achieve non-profit 501(c)(3) status, performed as house pianist for a weekly jam session

Jazz Pianist, solo, duo, trio, quartet, and big band

Licensed Real Estate Broker, *Oregon First, Realtors®* (two years)