KENDYL A. ROMÁN

AREA OF EXPERTISE

Intellectual Property

> Federal Special Master. Court appointed expert. Patents, Trade secrets, Copyright, Computer Data Recovery and Analysis. Forensic Computer Scientist/Expert. Consulting and testifying experience.

Object Oriented Programming Languages

> Java, C++, C#, Visual Basic, ruby, perl, JavaScript, XML, XAML, Delphi, Python, Apple Media Language, Mentor AMPLE, Lisp, NewtonScript, PenBasic, Dylan, MacApp.

Traditional Programming Languages

> C, perl, Assembly (680x0, 80x86, VAX, Nova, DEC-10, IBM 3x0), RISC Assembly (PowerPC, SPARC, MIPS, HP/PA), ABAP, COBOL, PL/I, PL/X, SAS, Pascal, Lua, APL, Forth, Lisp, Basic, JCL, awk.

Web Frameworks

> HTML, XHTML, CSS, Ruby on Rails, Resque, PHP, CSLA, PEAR, CEP, Django, Flask, REDIS, jQuery, AJAX, JSON, SQLAlchemy.

Computer Software

> Microsoft Windows NT/95/98/2000/XP/Vista/7/8/10 & For Pen, MS/DOS, UNIX Internals and Utilities (Linux, MacOS X, FreeBSD, SunOS, Solaris, MIPS, HP-UX, A/UX, Berkeley, AT&T, AIX, Amdahl UTS, SCO, POSIX, OSF), IBM MVS/TSO/ISPF, IBM VM/CMS, SQL Relational Database Systems (Oracle, SAP, SQL Server, Access, FoxPro, FoxBase, ingres, postgres, Progress, System-R), SAP, FileMaker Pro, X-Windows (X11, motif, MacX, HP VUE, OpenLook), Delphi, dBase, Visual Studio, QA Partner/Silk, PenPoint, Macintosh Programmers Workbench, HyperCard, Multimedia (Real Networks, Windows Media, QuickTime, Apple Media Tool, Premiere, Photoshop, Illustrator, Director, Flash, MediaTracks, SoundEdit), Documentation (FrameMaker, MS Word, MacWrite II), IBM PC/AT BIOS, Dialogic Toolkit & OS, HP 3000 MPE & MPE/XL, Mentor Graphics & Daisy Systems.

Computer Hardware

> IBM PC and Wintel compatibles, HP/PA HP9000/300's; 400's; 700's; & 800's—HP3000/900, VAX 11/780, IBM 360, 370 & 4300, Apple Macintosh (all models since 1984), Lightning, Firewire IEEE 1394, USB, Apple LaserWriter, Scanner, CD-ROM, CD-R, DVD, BlueRay, SGI (MIPS) Systems, Sun SPARC & 386i, Daisy, NCR NotePad, Apple II, DEC-10, NOVA.

Computer Forensics Tools

> Guidance Software's EnCase, Image MASSter Solo2 Forensics/Professional & Secure Hash Signature Generator (MD5, CRC32 Hashes), DriveImage, Ghost.

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LITIGATION SUPPORT

Orrick, Herrington, & Sutcliffe, New York, NY   *1999-2002*

Project: Software expertise and code analysis: copyright/trade secrets. Two related cases, testifying expert in second case. Tradescape.com, Inc., et al. v. Shivaram, et al.

Hale & Dorr, LLP, Boston, MA   *1999*

Project: Patent prior art search and analysis (Internet eCommerce). BroadVision, Inc. v. Art Technology Group

Russo & Hale, LLP, Palo Alto, CA   *1999*

Project: Patent prior art analysis and expert report (Interactive TV). John Berman v. Wink Communications, Inc.

Evers & Hendrickson, LLP, San Francisco, CA   *2000*

Project: Patent prior art analysis.

Orrick, Herrington, & Sutcliffe, New York, NY   *2000*

Project: Database and eCommerce software expertise and code analysis in copyright/trade secret case. RIA Telecommunications v. DollarsDirect.com, et al.

Zelle, Hofmann, Voelbel & Gette, Dallas, TX   *2000-2001*

Project: Database and Internet patent case. Prior art, Markman hearing, infringement analysis, etc. Konrad v. General Motors, et al.

Superior Court of California, Santa Clara County   *2000-2001*

Project: Court appointed expert in software trade secret case. Aspect Communications Corporation v. eConvergent, Inc., et al.

Quadros & Johnson, Santa Clara County, CA   *2000-2001*

Project: Trial testimony regarding Internet video, chat, database, and email software and server hardware. Hype Media, Inc. v. Anthony Siress & Lestat, Inc. (and cross action)

BakerBotts, New York, NY   *2001-2002*

Project: Claim interpretation and infringement testifying expert in Internet/TV patent case. Markman testimony. ACTV, Inc. and HyperTV Networks, Inc. v. The Walt Disney Co., ABC, Inc. and ESPN, Inc.

Tom Casazza, Napa County, CA   *2001-2002*

Project: Data recovery, embezzlement analysis, Internet, pornography. Contempt hearing testimony. Laguna Hermosa Corporation v. Clarence White, et al.

Gibbons, Del Deo, Dolan, Griffinger & Vecchione, New York, NY   *2002-2003*

Project: Patent infringement declaration regarding Firewire IEEE 1394. Dynacore Holdings, et al. v. U.S. Philips Corporation, et al. and Dynacore Holdings, et al. v. Sony Electronics Inc., et al.

Epstein Becker & Green, New York, NY   *2002*

Project: Video compression and Internet transmission analysis & report. On2.com Inc. v. Ecoin Co., Ltd.

HS Law Group, San Jose, CA   *2002*

Project: Forensic data recovery and Internet email analysis.
         Seema Chawla v. Alphasoft Services Corporation, et al.

Adams, Coogler, Watson & Merkel, West Palm Beach, FL   *2002-2003*

Project: Analysis of medical communication system in wrongful death.
         Deposition. Rubin v. Bethesda Memorial Hospital et al.

Friedman, Peterson, Stroffe & Gerard, Irvine, CA   *2002-2003*

Project: Design patent prior art search and invalidity declaration.
         Turn-Luckily Intl, Inc. v. Fry's Electronics, Inc.

Superior Court of California, Santa Clara County   *2003-2004*

Project: Court appointed expert for computer drive analysis
         (financial/pornography). Ribeiro v. Weichselbaumer

Naval Legal Service (JAG), Pearl Harbor, HI   *2003*

Project: Testified as Computer Forensic Expert in Brady Hearing and
         General Court-Martial (Internet/child pornography).
         United States v. Alec Schultz

Foley & Lardner, Milwaukee, WI   *2003*

Project: Patent infringement analysis/report and invalidity rebuttal
         regarding electronic vehicle compasses and mirrors.
         Donnelly Corporation v. Johnson Controls (cross action)

Hunton & Williams, Washington, DC   *2003*

Project: Reexamination Prior Art Declaration under 37 C.F.R. § 1.132.
         In re U.S. Patent No. 6,279,033 (Microstrategy, Inc.)

Kirkland & Ellis, Washington, DC   *2003*

Project: Federal Circuit Appeal: Judges Linn, Plager, Friedman.
         ACTV, Inc. and HyperTV Networks, Inc. v. The Walt Disney Co., ABC,
         Inc. and ESPN, Inc.

Plant, Christensen & Kanell, Salt Lake City UT   *2003-2005*

Project: Analysis of computer system, failure data, and surveillance
         video in data center fire suppression incident.
         Safeway, Inc. v. Consonus, Inc. et al.

Knopik Varner Moore, Tampa, FL   *2004*

Project: Retained to Plaintiff after deposition and settlement with Dr.
         Fisher. Rubin v. Bethesda Memorial Hospital et al.

Skadden, Arps, Slate, Meagher & Flom, Washington, D.C.   *2003-2004*

Project: Analysis of over two million lines of source code regarding
         trade secret misappropriation arbitration in Atlanta.
         CAPS Logistics, Inc. v. Ratliff, et al.

Fenwick & West LLP, Silicon Valley, CA   *2004-2005*

Project: Mainframe software trade secret/copyright infringement.
         Compuware Corporation v. International Business Machines Corp. (IBM)

Pillsbury Winthrop LLP, Fort Worth, TX   *2004-2005*
Project: Copyright/trade secret/license defense in database conversion.
           Wayne Fowler v. Bell Helicopter Textron, Inc.

Simpson Thacher & Bartlett LLP, Palo Alto, CA   *2004*
Project: Patent validity and infringement: Internet videoconferencing.
           Collaboration Properties, Inc. (Avistar) v. Polycom, Inc.

BakerBotts, New York, NY   *2004-2005*
Project: Patent invalidity regarding Internet pay-per-click advertising
           Overture Services, Inc. (Yahoo) v. FindWhat.com, Inc.

Pritchard and Kay, San Jose, CA   *2004-2005*
Project: AAA testimony regarding auto dealership computer system.
           Universal Computer Services, Inc. et al. v. Roulette Dealership

DLA Piper Rudnick Gray Cary LLP (formerly Gray Cary Ware & Freidenrich), Palo Alto, CA   *2004-2005*
Project: Patent invalidity: keyboard control of CD audio.
           ITC Investigation No. 337-TA-519 (Gateway v. Hewlett-Packard)

California Department of the Youth Authority, Sacramento, CA   *2005*
Project: Forensic video analysis and administrative hearing testimony.
           N.A. Chaderjian Youth Correctional Facility—Use of Force Appeal

Wilson, Sonsini, Goodrich & Rosati, Palo Alto, CA   *2005*
Project: Patent invalidity/non-infringement: Data-driven multimedia
           Datamize v. Fidelity, Scottrade, Interactive Brokers Group, et al.

Greenberg Traurig LLP, Denver, CO   *2005-2006*
Project: Patent interpretation/invalidity/non-infringement: FDC chips
           Phillip M. Adams, et al. v. Gateway

Law Offices of Dan MacGuire, Davis, CA–Law Offices of Donald J. DeShaw, Sacramento, CA   *2005-2006*
Project: Software/hardware copyright/trade secrets: Opthalmic imaging
           Opthalmic Imaging Systems v. Mark Fukuhara, et al.

Russ, August, & Kabat, Los Angeles, CA   *2005-2006*
Project: Trade secrets and defamation defense: Video game enhancement
           Electro Source, LLC. v. Fire Intl' Ltd. Inc, et al.

Simpson Thacher & Bartlett LLP, Palo Alto, CA   *2005-2007*
Project: Patent validity and infringement: Internet videoconferencing.
           Collaboration Properties, Inc. v. Tandberg, Inc. & Tandberg ASA

Pillsbury Winthrop LLP, Palo Alto, CA   *2006-2007*
Project: Copyright/trade secret video compression/pattern recognition.
           eTreppid Technologies LLC v. Dennis Montgomery

California Department of Personnel Administration, Sacramento, CA   *2006*
Project: Forensic video analysis, videogrammetry, and photogrammetry.
           Chaderjian Youth Correctional Facility—Civil Case Defense

Law Offices of Owen P. Rafferty, Los Angeles, CA   *2006*
Project: Forensic surveillance video analysis and photogrammetry.
           People v. Michael Gralapp

Greenberg Traurig LLP, Denver, CO   *2006-2007*

Project: Patent scope/interpretation/invalidity/non-infringement:
           Vehicle bus interface. Markman and jury trial testimony.
           Omega Patents, LLC v. Directed Electronics, Inc.

Fish & Richardson P.C., Washington, D.C.   *2006-2007*

Project: Patents: online advertising and electronic catalogs.
           International Business Machines Corp. (IBM) v. Amazon.com, Inc.

Townsend and Townsend and Crew, LLP, San Francisco, CA   *2007*

Project: Patents: container terminal database systems including image
           processing, crane controllers, GPS, and wireless networking.
           APS Technology Group, Inc. v. Paceco Corporation

James E Carty III, P.C. New York, NY (and NJ)   *2007-2010*

Project: Patents: employee tracking database systems with telephone
           verification
           Infocrossing, Inc. v. Sandata Technologies, Inc.

Bohm, Matsen, Kegel & Aguilera, LLP, Costa Mesa, CA   *2007*

Project: Enterprise networked database and ERP system (contract terms).
           QAD Inc. v. Ingersoll-Rand Company

Heller Ehrman, LLP, San Francisco, CA & Quinn Emanuel, Redwood Shores, CA   *2007-2008*

Project: Patents prior art research, system reconstruction, & analysis
           Disk Link Corporation v. H&R Block Digital Tax Solutions, et al.

Heller Ehrman, LLP, Menlo Park, CA   *2007-2008*

Project: Patents: targeted Internet advertising based on profile
           ValueClick, Inc. v. Revenue Science, Inc.

Terran Steinhart, Esq., Los Angeles, CA   *2009*

Project: Testimony regarding Computer Adaptive Testing (CAT) security
           Board of Nursing v. Thelma Macabeo

William Campisis, Berkeley, CA   *2009*

Project: Analysis of computer medical records system.
           Nader v. Kaiser

Capshaw DeRieux, Longview, TX; Vanek Vickers & Masini, Chicago, IL; Watson Rounds   *2009-2011*

Project: Patents: network devices including firewalls
           GraphOn Corporation v. Juniper Networks, Inc.

Laminack, Pirtle & Martines LLP; Matthews, Lawson & Bowick, PLLC, both of Houston, TX   *2009-2012*

Project: Trade secret & patent: Automated end-to-end Purchase to Pay
           Wellogix, Inc. v. BP America, Inc. et al. (Arbitration)
           Wellogix, Inc. v. Accenture et al. (Jury Trial)
           SAP v. Wellogix, Inc.

Gutride Safier LLP, San Francisco, CA   *2009-2012*

Project: Class Action: OEM version of Microsoft Windows Vista
           Kevin Embry v. Acer America Corporation

Capshaw DeRieux, Longview, TX; Eugene M. Cummings, P.C., Chicago, IL   *2010-2011*

Project: Patents: digital music organization, management, and download
           Premier International v. (Microsoft) Verizon, Real Networks, et al.

The Lanier Law Firm, P.C., Palo Alto, CA   *2011*
Project: Patents: human movement measurement systems (Wii)
            ITC 337-TA-743 (Motiva v. Nintendo Co Ltd, Nintendo of America Inc)

Watson Rounds, San Francisco, CA   *2011*
Project: Patent: multiport printers
            Futurelogic, Inc. v. Nanoptix, Inc.

U.S. District Court, Western District of Oklahoma   *2012-2013*
Project: Federal Court Special Master: Source code infringement
            Paycom Payroll, LLC v. Richison and Period Financial

Fish & Richardson PC, Washington, DC   *2012*
Project: Patents: database custom grouping and automatic broadcasting
            Reporting Technologies, Inc. v. Emma, Inc.

Shun Chen, Irvine, CA   *2012-2013*
Project: US and International website marketing e.g. Amazon and eBay
            Innersvingen AS v. Sports Hoop Inc et al

Harris & Ruble, Los Angeles, CA   *2013*
Project: Hospital medical records system and privacy regulations
            Zacarias, Malanche, et al. v. Eisenhower Medical Center

Kutak Rock LLP, Washington, DC   *2013*
Project: Internet database client/server software analysis
            Twin City Fan Companies, Ltd. v. FPT Software

Rothwell, Figg, Ernst & Manbeck, Washington, DC   *2013*
Project: Patents: Security options exchange system (source code review)
            Chicago Board Options Exchange v. International Securities Exchange

Covington & Burling LLP, Redwood Shores, CA   *2014*
Project: Patent: Online purchase-to-pay system with ERP integration
            Ariba, Inc. v. Coupa Software Inc.

Sterne, Kessler, Goldstein & Fox P.L.L.C., Washington, DC   *2014-2015*
Project: Patents: CBM Review of 5 securities exchange trading patents
            TD Ameritrade v. Trading Technologies International

Fay Sharp LLP, Cleveland, OH   *2014-2016*
Project: Patents: Fuel cap tester and fuel tank tester
            Hickok Inc. v. Systech International, LLC

Baker & Hostetler LLP; Kolisch Hartwell, Arnold and Porter LLP; Wolf Rifkin Shapiro Schulman and
Rabkin LLP; & Reinhart Boerner Van Deuren   *2014-2015*
Project: Patents: Storage device wipe, duplicate, and write protect
            MyKey Technology Patent Litigation (Guidance Software/Guidance-
            Tableau; CRU Acquisition Group; Logicube; Intelligent Computer
            Solutions; and Tefkat)

Buether, Joe & Carpenter, LLC, Dallas, TX   *2015*
Project: Patents: Internet caching and servers
            Parallel Networks v. Barracuda Networks, and related cases

Goodwin Procter LLP, Boston, MA   2015
Project: Patents: Label printers and software
            Sanford and DYMO v. Esselte

Duane Morris LLP, Washington, DC   2015-2016
Project: Patents: IPR of two portable digital video camera patents
            GoPro Inc. v. Contour, LLC

Brown Rudnick LLP, Boston, MA; Baker & Hostetler LLP, New York, NY   2015
Project: Software Infringement Benefit: SAS Language Processing
            SAS Institute Inc. v. World Programming Limited

Gutride Safier LLP, San Francisco, CA   2015
Project: Class Action: Tablets and charging systems for children
            Miller v. Fuhu, Inc. et al.

Tiffany and Bosco, Phoenix, AZ   2015-2016
Project: Product, Patent, and Document Review
            Davis and Carlos v. HireVue, Inc. et al.

Baker & McKenzie LLP, San Francisco, CA and Dallas, TX   2015
Project: Copyright/Trade Secret: Heroes Charge Mobile Game
            Lilith Games v. uCool, Inc.

LaFollette Johnson DeHaas Fesler & Ames, Los Angeles, CA   2015-2016
Project: Electronic Medical Record System
            Chowdhury v. Boghossian

Sterne, Kessler, Goldstein & Fox P.L.L.C., Washington, DC   2015-2016
Project: Patents: CBM Review of securities exchange trading patents
            Interactive Brokers, et al. v. Trading Technologies International

Crowell & Moring LLP, Irvine, CA   2015
Project: Patent: CBM Review of web page authentication patent
            T. Rowe Price Investment Services v. Secure Axcess

Fish & Richardson, Boston, MA   2016
Project: Patents: CBM Review of securities exchange trading patents
            TradeStation Group, et al. v. Trading Technologies International

Venable, LLP, San Francisco, CA   2016
Project: Trade Secrets: Deep Learning Artificial Intelligence and CRM
            Loop AI Labs vs. Gatti, Almawave, et al.

PROJECTS

ImageFlow, Inc.   *8/02-present*

Developed line of products and services for network communication of medical images and other information. Led team to develop custom application and video card device driver. (C++, Java, C, MS Dev, CodeWarrior, JDK, JNI).

Evrio, Inc.   *7/01-present*

Patent and product development and marketing. Invention licensing.

MediaFrame, Inc.   *5/99-present*

Released Web-based product line of tools and services for IP attorneys and expert witnesses including patent analysis, source code analysis, copyright and trade secret analysis and presentation. (Oracle, PL/SQL, perl, iRefinery).

Development of forensic code compare and video processing tools. (perl, Applescript).

Development of video capture and network transmission (Java, C, C++, CodeWarrior, MPW, QuickTime, Firewire IEEE 1394).

Internet and Database Consulting. Invention and development of large web-enabled database systems including the Global Media Exchange, BoomerangIt.com, and the new National Bicycle Registry (Sun Enterprise, Oracle RDBMS and Application Server, PL/SQL)

Applied Materials   *8/99–3/01*

Developed Word template and macros to automate formatting and verification of data for integration into database driven documentation system. (Visual Basic for Applications, Internet CGIs)

PocketPass.com   *6/00–8/00*

Gathered requirements and provided technical expertise and management to management for implementation multi-use Internet cash/phone card. (Project Management, Database Analysis)

Product Success.com   *11/99–5/00*

Provided technical expertise and management to corporate management and board for implementation of e-Commerce and Oracle database driven product development portal. (Technical Advisor and Liaison)

Centric Media, Inc.   *5/99–5/02*

Designed and implemented high performance database and Internet e-Commerce site BoomerangIt.com. The National Bicycle Registry. (Project Manager: Oracle, PL/SQL, Sun Enterprise Server, Secure HTTP, electronic payment processing)

IntraCom Corporation   *3/96–5/99*

Built and managed development, QA, engineering, production, regulatory affairs, system administration, customer service, technical publications and training departments. FDA registration

accepted in about 60 days. Led business strategy team for pursuing venture capital firms, investment bankers, and potential corporate partners and acquisitions. (Chief Technical Officer, Director)

TMT, Inc. *12/97–5/99*

Setup software development processes for source control, configuration management, problem tracking, QA automation and development methodology. Assisted in staffing development team. (MS SourceSafe, MS Developer Studio, MSVC++, PRTracker, QA Partner)

VIT, Inc. *4/97–6/97*

Set up initial QA Department and processes for Internet data warehouse access startup. (QA Partner, Java, JavaScript).

@Home Network (and TCI.Net) *6/96–3/97*

Set up initial QA plan, processes, and department, for cable modem startup, which was the primary test organization for the new features of Netscape 3.0. Developed installers. Provided escalation support for customer service and technical support organizations. Shipped 1.0 product. Staffed QA through $1B IPO. Performed Benchmark testing of Netscape and Internet Explorer. (QA Partner, PR Tracker, Java, JavaScript, Web Browsers)

Omron Advanced Systems *2/96–5/96*

Set up initial QA plan, processes, and department, for US development branch of multi-national conglomerate. (QA Partner, PR Tracker, Developer Studio)

The Carl Group, Inc.; Multimedia/Internet Lab *5/93–7/98*

Primary inventor and architect for a product that transmits medical video, such as echocardiogram, over the Internet. Developed and marketed multimedia authoring tools: TCG Libraries and XMeDIA. Early development of multimedia on the World Wide Web. Early web sites include concept sites for HP and Sun, and sites designed for Tandem and the San Francisco Giants. Early development of cross platform multimedia CD-ROM technology. CD-ROM titles include a 20 CD series for National Geographic, "Launch" CD-ROM magazine, Builder Buyer's Guides, Apple Products CD, American Government and Politics Today (a multimedia college textbook on CD-ROM), and CD-Romance. (Java, Apple Media Tool, QuickTime, Visual Studio, Visual C++, Visual Basic, MPW C, perl, FileMaker Pro)

Ascent Logic Corporation *6/95–11/97*

Developed cross platform online help systems using either FrameViewer or Acrobat Reader. These systems allow the same documents to be used on Macintosh, Windows, and UNIX platforms. (FrameMaker SDK, Acrobat SDK, MSVC++, MPW C, Solaris, HPUX)

Sun; SunSoft Developer Solutions *1/95–7/98*

Developed on-demand data driven publishing system that is used to publish Sun Solutions catalogs to the Internet and to print. A 6000 page catalog can be fully formatted, indexed and prepared for

print in less than 10 minutes. (FrameMaker SDK, perl, Progress, Illustra, Oracle, HTML)

Apple Computer, Inc.   *5/93–8/94*

Led team of programmers, writers, and an illustrator to complete initial documentation for the Apple Media Tool Programming Environment. Examined source code and used the source code debugger to understand the object oriented language and framework. Made presentation in major cities as part of product launch. Experience with FireWire specification and devices drives. (Apple Media Tool, Apple Media Language, SK8, QuickTime, MPW 3.3, Newton FrameMaker templates)

Mentor Graphics Corporation   *5/93–4/94*

Taught classes on Mentor's applications and AMPLE programming language at Mentor training facilities and at customer sites throughout the USA.

Amdahl; Advanced Systems (now Fujitsu)   *4/92–5/93*

Developed Diagnostic Strategy for large-scale Open Systems mainframe. System included Sun workstation based console with interface to JTAG scan, expert system based FRU isolation, and X windows based service tools. Developed hardware design validation test suite. Managed up to 27 engineers and consultants. (C++, SPARC, X, OpenLook, tcl, FrameMaker, 123)

Slate Corporation   *11/91–4/92*

Technical liaison for team writing user documentation for PenApps Development Environment and PenBasic language. Developed applications for training purposes. (PenPoint, MS/Windows for Pens, PenApps, PenBasic, MS/Word)

Hewlett Packard; Networked Systems Group–Systems Support Engineering   *2/91–10/91*

Designed and implemented key components of the HP-UX Support Tool Manager. Work included system and peripheral verifiers and exercisers, the diagnostic tool manger, X Windows user interface, X Windows graphics tests, and system independent code. Also included port of code to MPE/XL System Verifier designed for customer self maintenance. (HP 9000 Series 700 [all models, including unannounced machines] & Series 300, HP-UX, MPE/XL, HP 3000/900s, UNIX, POSIX, IPC, C, X, HP VUE)

Mosel   *11/90–11/91*

Designed and implemented bring-up diagnostics for an i486 IBM PC/AT with an EISA bus. Developed various versions of BIOS firmware including device drivers. (80x86 architecture, MS/C & assembly, debug, Intel In Circuit Emulator [ICE])

Apple Computer, Inc.; Developer University   *4/90–11/90*

Wrote detailed Lab Instructions for the Macintosh Programming Fundamentals Self-Paced Training Course on CD-ROM. Developed incremental versions of the target application that demonstrated

the functioning of each additional concept. Developed animations and narration scripts showing the entire process of developing a target application. Tested Lab Instructions in several classes. Taught MPF classes and helped students debug problems in C and Pascal. Also developed 70 page Leaders Guide for a mentored version of the course. (Think C, MediaTracks, Director, HyperCard, ResEdit, Inside Macintosh, MacRecorder & SoundEdit, MS/Word, MacWrite II, MacPaint, MacDraw, CD-ROM mastering)

Tandem Computers; Processor and Memory (later Compaq, now Hewlett Packard)   *12/88–4/90*
Developed hardware design validation tests in MIPS R3000 Assembly and C. Developed tools to convert machine code to Daisy simulator RAM initialization files. Developed automatic regression test mechanism. Analyzed gate level simulation results. (MIPS Systems, Sun, 386i, Daisy Systems & Tools, R3000 Processor Architecture, Macintosh II, Tandem Systems, UNIX, C, R3000 Assembly)

The Carl Group, Inc. (formerly Diventure Engineering Services)   *5/86–4/92*
Technical advisor to small consulting firm. Interviewed new consultants. Met with clients to determine skill requirements. Negotiated contracts. Assisted consultants with technical issues.

Managed technical and animation projects. Edited technical newsletter.

KAR Enterprises, Inc.   *8/86–12/95*
Developed education and entertainment software for Macintosh consumer market. (Apple Certified Developer/Partner, Inside Macintosh, A/UX, MPW, MPW C, ResEdit, MacsBug, Macintosh XL & SE, Apple LaserWriter, ImageWriter, & Scanner, MacRecorder, Macintalk, HyperCard)

Hewlett Packard; Networked Systems Group–Systems Support Engineering   *10/86–12/88*
Key participant in developing Support User Interface Standard and the Support Processor Based Diagnostic Strategy.

Developed software integration process to gather software from HP divisions around the world and submit to both Unix and MPE/XL Integration groups. Wrote submittal specifications, internal procedures and tools. Trained staff of four to execute procedures. (UNIX, MPE/XL, X-Windows, Macintosh II)

Developed software defect tracking system with reports and graphs.

Hewlett Packard; Information Technology Group–Information Hardware Operation   *4/86–10/86*
Designed, implemented, and tested Online Diagnostics and Operating System interfaces for RS232 Multiplexer and HP Interface Bus Device Adapter Boards. Designed and implemented IOMAP & CAEXR offline support tools, which test HP I/O and storage systems interfaces. (C, Pascal, UNIX, HP Precision Architecture, Device Drivers)

Dialogic Systems Corporation   *5/82–4/86*

Designed and managed large C and Pascal software releases using Dialogic/IBM technology (code generation, editors, programmer productivity tools, source code control, prototype development/debug environment, and problem tracking systems). Led Dialogic Development Environment Project. Responsible for Development Standards, Environments, Tools, Controls, Process and Productivity. Coordinated product integration. (Pascal, COBOL, Integration of UNIX functionality into MVS/TSO/ISPF and Dialogic products, UNIX development tools)

Designed, implemented, and managed the Diagnostic Monitor Project which include all PROM firmware code, library functions, and portions of the Operating and Diagnostic Systems. (C, UNIX-like libraries and O.S., Device Drivers)

Designed, implemented, enhanced the Diagnostic Command Language (DCL). (C-like interpretive programming language and monitor)

Designed and implemented the System Module Self Test PROM Diagnostics, the Board Change Control System (PC Board Layout), PAL and FPLA assembler, and PROM Emulyzer upload/download utilities. Completed port of and enhancements to the Lucas Drawing (CAD) System. (C, UNIX, 68000, Fortran)

IBM, General Products Division   *5/81–8/81*

Designed, implemented, and supervised MIS Data Entry and Reports System and user-friendly head count management system. Designed user-friendly System-R report generation. (PL/I, MVS/TSO/ISPF, VM/CMS/ISPF, VM/CMS/EXEC, APL, System R RDBMS, SQL, SGML)

Brigham Young University   *2/78–4/82*

Assisted students with Digital Logic Design Projects and Z80 System Project. (Z80 assembly)

Computer-aided translation of natural language. (IBM 360, Automated Language Processing Systems)

PROFESSIONAL POSITIONS

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05/99-      MediaFrame, Inc., Sunnyvale, CA         Chairman/CEO/Founder
05/97-05/99 IntraCom Corporation, Sunnyvale, CA     Director/CTO/Inventor
01/92-05/93 Amdahl Advanced Systems, Fremont, CA    Design Verification Manager
11/86-07/98 The Carl Group, Inc., Cupertino, CA     VP Engineering/Co-Founder
04/86-12/95 KAR Enterprises, Inc., Sunnyvale, CA    Chairman/CEO/Founder
05/82-03/86 Dialogic Systems, Sunnyvale, CA         Project Manager/Engineer
09/81-04/82 Brigham Young University, Provo, UT     Digital Logic Lab Assistant
05/81-08/81 IBM General Products Div., San Jose, CA Coop Programmer
02/78-04/78 Translation Sciences Institute, Provo, UT Research Assistant
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EDUCATION

1976-1982 Brigham Young University   Provo, UT
B.S., Computer Science. Graduated with High Honors. GPA 3.9.

1999   Oracle: Developing Web-based Applications

1999-2002 Patent and Trademark Office and SCI3 Seminars: Computer Guidelines 101, 35 USC 103 Non-obviousness, Petition Practice, Double Patenting, Unity of Invention, Business Method Patents, Structure and Meaning of Patent Claims, Rest of Festo, Affidavit Practice, 35 USC 112(2), Creating and Defending Truly Valuable Patents.

TRAINING

Mentor Graphics: Course Instructor
Apple: Course Developer and Instructor

PROFESSIONAL MEMBERSHIPS

Association for Computing Machinery (ACM)
Institute of Electrical and Electronics Engineers, Inc. (IEEE)
Developer Programs: Adobe/FrameMaker, Apple, Be, Kodak, Microsoft, Oracle

AWARDS

BYU Trustee Scholar
Phi Kappa Phi Honor Society
President of BYU Chapter of Association of Computing Machinery

WRITTEN PUBLICATIONS

Macintosh Programming Fundamentals–Self Paced Training (CD-ROM and Lab Book)   *1990*
Publisher: Apple Computer, Inc., Cupertino, CA

Apple Media Tool Programming Environment–User Guide & Programming Reference   *1993*
Publisher: Apple Computer, Inc., Cupertino, CA

US PATENTS

6,803,931; 6,925,608; 7,016,417; 7,175,106; 7,191,462; 7,233,619; 7,257,158; 7,397,851; 7,419,104; 7,424,473; 7,526,029; 7,552,395; D594,604; 7,671,864; D613,453; 7,698,653; D617,054; 7,766,022; 7,789,098; 7,802,582; D626,744; D626,745; D626,746; D626,950; 7,828,038; 7,841,355; D635,131; D638,576; 7,991,052; 8,004,572; D645,612; D646,020; D646,432; D646,841; D646,842; D646,843; D646,844; D646,845; D646,846; 8,056,572; 8,068,544; 8,070,544; D653,804; 8,170,095; 8,181,661; D668,129; 8,282,493; 8,290,034; 8,342,197; 8,348,911; 8,397,738; 8,416,847; 8,433,708; 8,459,327; 8,500,563; 8,523,713; 8,537,898; 8,543,936; 8,556,754; 8,590,777; 8,602,921; 8,608,247; D696,102; 8,744,135; 8,789,550; 8,795,109; 9,057,587; 9,061,747; 9,068,795; 9,149,668; 9,212,868; 9,266,176; 9,275,076; 9,304,993; 9,335,120; 9,336,238

PUBLISHED US PATENT APPLICATIONS

2002/0004860; 2002/0175221; 2002/0196848; 2003/0005428; 2004/0019609; 2004/0111424; 2004/0250216; 2006/0000499; 2006/0067408; 2006/0114987; 2006/0129523; 2006/0283491; 2006/0283492; 2007/0113261; 2007/0119971; 2007/0223574; 2007/0247515; 2008/0006317; 2008/0032824; 2008/0033335; 2008/0107169; 2008/0107174; 2008/0137751; 2008/0250458; 2008/0250459; 2009/0065039; 2009/0069121; 2009/0091440; 2008/0098954; 2009/0229742; 2009/0271907; 2009/0272394; 2009/0272414; 2010/0034287; 2010/0092088; 2010/0184537; 2010/0200038; 2010/0304899; 2010/0321466; 2010/0325802; 2010/0328420; 2011/0003521; 2011/0019915; 2011/0030752; 2011/0108078; 2011/0132420; 2011/0192264; 2011/0294611; 2011/0320413; 2012/0006371; 2012/0027315; 2012/0046100; 2012/0112516; 2012/0315423; 2013/0019375; 2013/0059632; 2013/0104787; 2013/0328999; 2013/0335611; 2013/0335612; 2013/0339039; 2014/0066231; 2014/0100066; 2014/0113772; 2014/0309064; 2014/0324894; 2014/0358973; 2014/0370993; 2015/0034722; 2015/0233675; 2015/0241172; 2015/0251734; 2015/0351473; 2015/0368925; 2015/0376912; 2016/0026655

INTERNATIONAL PATENTS

Australia AU 2008/296876; United Kingdom GB (England, Scotland, Wales) and Europe EP2203224 (Ireland IE2203224, France FR, Italy IT, Spain ES2535010, Portugal PT2203224, Romania RO, Germany DE 60208037237.5); New Zealand NZ 584462; South Africa ZA 2010/02395

PUBLISHED INTERNATIONAL PATENT APPLICATIONS

EP1459271; WO/1999/059472; WO/2003/058397; WO/2009/032332