Michael S. Kogan
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Education:

B.S. Mathematics/Computer Science, Emory University, Atlanta, GA, 1984
M.S. Computer Science, Nova University, Ft. Lauderdale, FL, 1986
Sc.D. Computer Science, Nova University, Ft. Lauderdale, FL, 1991

Summary Of Experience:

Twenty-nine years with primary focus on PC and embedded systems product development. Specialized skills in operating systems and system software, cross-platform system software, computer platform and microprocessor architecture, consumer electronics, and project management/planning. Significant experience leading product development teams, as a consultant, and as an expert witness in support of technical litigation.

Coauthor of the book *The Design Of OS/2*, which describes the motivation, design, and internals of the 16-bit and 32-bit OS/2 systems. Freelance writer published in the *IBM Systems Journal*, the *Personal Systems Developer*, *OS/2 Professional*, *Electronic Entertainment*, and *Byte Magazine*. Senior Editor and feature writer for *OS/2 Professional* magazine. Member of the ACM and the IEEE.

Litigation Experience:

2011-12 – ***REC Software USA v. Microsoft, SAP AG***. Serving as expert technical consultant in areas of multitasking operating systems, loaders, and servers. Providing claim construction, invalidity and noninfringement reports, deposition, and court testimony. Assisting Fish&Richardson P.C. for Microsoft.

2011-12 – ***Apple v. Motorola Mobility***. Serving as expert technical consultant in areas of multitasking operating systems and I/O device services. Providing claim construction, invalidity, and noninfringement reports, deposition, and court testimony. Assisting Quinn Emanuel Urquhart Oliver & Hedges LLP for Motorola Mobility.

2011-12 – ***Apple v. Eastman Kodak***. Serving as expert technical consultant in areas of Served as expert technical consultant in areas of power management, embedded systems, and I/O devices. Providing claim construction, invalidity, and noninfringement reports, deposition, and court testimony. Assisting K&L Gates LLP for Eastman Kodak.

2011 – ***Apple v. Nokia***. Served as expert technical consultant in areas of operating systems and I/O devices. Provided claim construction, invalidity, and noninfringement reports before matter settled. Assisted Alston & Bird LLP for Nokia.

2011 – ***Apple v. Nokia, HTC***. Served as expert technical consultant in area of multitasking operating systems with graphical user interfaces in case before United States ITC. Provided claim construction, invalidity, noninfringement, and domestic industry reports. Assisted Alston & Bird LLP for Nokia and Quinn Emanuel Urquhart Oliver & Hedges LLP for HTC.

2010 – ***Apple v. Nokia***. Served as expert technical consultant in areas of power management, embedded systems, boot management, and system initialization. Provided claim construction, invalidity, noninfringement, and domestic industry reports, and testified in deposition and court before United States ITC. Assisted Alston & Bird LLP for Nokia.

2009-2010 – ***Juniper v. GraphOn***. Provided expert technical consulting in areas of firewall and remote application/desktop technology. Assisted Vanek, Vickers, Masini P.C. for GraphOn.

2009 – ***Cleremont County of Ohio v. Valor Systems and American Southern Insurance Company***. Served as technical expert to resolve dispute regarding deployment of computer assisted dispatch software. Assisted Meyers, Roman, Friedberg & Lewis for American Southern Insurance Company.

2009 – ***Lenovo v. Shuttle***. Provided expert technical consulting in areas of POST, BIOS, and system initialization. Assisted Alston & Bird LLP for Lenovo.

2006-2009 – ***Adams v. Fujitsu, Sony, IBM, Dell, MPC, Winbond, Asustek, Quanta, MSI, National Semiconductor***. Provided expert technical consulting for group in floppy diskette controller litigation alleging patent infringement. Assisted Morrison & Foerster LLP, Jenner & Block LLP, Quinn Emanuel Urquhart Oliver & Hedges LLP, Howrey LLP for Fujitsu, Sony, IBM, Dell, MPC, Winbond, Asustek, Quanta, National Semiconductor.

2008 – ***Superspeed LLC v. IBM***. Provided technical expert consulting on cache technology in parallel and distributed processing environments. Worked with Jones-Day as consulting expert for IBM.

2008 – ***e.Digital v. LG Electronics et al.***. Provided technical expert consulting on flash memory and flash file systems. Assisted Ropes & Gray LLP as consulting expert for LG Electronics.

2007-2008 – ***Gobeli v. Microsoft***. Provided technical expert consulting in case regarding interrupt threading technology in desktop and mobile Windows products. Assisted Fish&Richardson P.C. for Microsoft.

2007-2008 – ***FriendFinder v. Epic Realm Licensing, LLC***. Served as expert consultant in case regarding dynamic web page generation technology. Assisted Williams, Morgan, Amerson, P.C. as consulting expert for Epic.

2006 – ***Deep Nines, Inc. v. McAfee, Inc*.** Served as expert consultant in patent dispute regarding internet security and firewall technology. Assisted Williams, Morgan, & Amerson legal team representing McAfee.

2006 – ***3DMD v. Canfield Scientific***. Served as expert consultant in copyright infringement dispute regarding stereo photogrammetry and 3D machine vision. Assisted 3DMD and legal team from Wong, Cabello, Lutsch, Rutherford & Brucculeri in source code and technology analysis.

2006 – ***Adams v. IBM/Lenovo***. Served as expert technical consultant in floppy diskette controller litigation alleging patent infringement against IBM/Lenovo. Provided patent claims analysis and technical expertise to IP team from Jones-Day for IBM/Lenovo.

2004-2005 – ***Gobeli v. Apple***. Provided technical expert consulting in case regarding interrupt threading technology in Mac OS-9 and OS-X. Worked with Apple's legal representation Wong, Cabello, Lutsch, Rutherford & Brucculeri on patent claims interpretation and analysis, deposition preparation, and deposition for Apple.

1998-1999 – ***Shaw, Moon et al v. Toshiba***. Served as technical expert for the class action against Toshiba regarding defective floppy diskette controllers assisting legal council The Reaud Law Firm (Wayne Reaud) and Layfield Associates of Beaumont, TX. Toshiba settled the dispute for $2.1B for the class. Provided technical expertise for Shaw, Moon, et al. on detection apparatus, rendered expert opinion, assisted in depositions. Also consulted for Packard, Packard, & Johnson of Salt Lake City, UT in other FDC-related matters.

1994-1995 - ***Intel v. Cyrix, Texas Instruments, AMD, et al***. Served as software expert for Intel in action involving the Crawford 338 patent regarding intellectual property of the 80386 processor. Worked with Arnold, White, and Durkee as software expert including expert opinion and court testimony for Intel.

Experience:

Michael S. Kogan Inc., Jacksonville, FL
July 1992 to Present

President. Management and technical responsibility of business providing expert consulting services in the embedded, internet, and desktop sectors. Consulting services include expert support of technical litigation, technical analyses, operational and feasibility assessments, and software/hardware design and development. Recent activity includes technical and expert support of intellectual property cases, including patent analysis, claims construction, deposition preparation, expert opinion, code analysis, prior art search, arbitration, and dispute resolution. Recent development activity includes web programming utilizing object-oriented web technologies such as Ruby on Rails, CakePHP, Java, XML-RPC, and SOAP in web and mobile applications, and applets for the Apple, Android, and Blackberry platforms.

Cygnus Solutions/Redhat.Com, Atlanta, GA
June 1997 to December 1998

Director of Engineering. Created, staffed, and directed the Atlanta-based software development center for Sunnyvale, CA-based company specializing in support of Open Sourceware and the GNU tools for embedded and desktop environments. Responsibilities included engineering direction and management for Cygnus's cross-platform Integrated Development Environment (IDE) product, and Cygnus's board support tools for enabling rapid software development on multiple embedded hardware platforms. Successfully shipped the Foundry 1.0 and 1.1 products for the GNU tools on MIPs, PowerPC, and other microarchitectures on time and defined next-generation embedded tool directions. Cygnus Solutions was purchased by Redhat.Com in January 2000.

Ratio DesignLab Inc. , Atlanta, GA
June 1996 to March 1997

Senior programmer/manager. Led team to develop and test an advanced software pager for Motorola based on an embedded ARM7T (Thumb) processor, FLEX radio, 240x160 LCD w/touchscreen, and infrared communications. Ported Ratio's MDSOS embedded operating system to the ARM7, ARM7T (Thumb), and Motorola 68k architectures. Innovated modifications to ARM tools to support position-independent reentrant link units. Developed software drivers and debugged wireless reference platform hardware that supports multiple CPU architectures (x86, m68K, ARM). Implemented unique embedded flash boot management, flash file systems technology, and power management algorithms.

Motorola Corporation, Boynton Beach, FL and Atlanta, GA
May 1995 to June 1996

Chief architect. Led the design and implementation of MEMOS, a portable embedded operating system for one- and two-way wireless platforms (Motorola PageWriter 2000). Responsible for the kernel, device drivers, storage mechanisms, power management, and system API. Exploited flash memory technology to create a unique minimal memory footprint that used flash as both a ROM and a non-volatile storage mechanism for messages, programs, and graphics, reducing system cost and improving system reliability. Managed and educated team of young talent into professional software developers.

Digital Design, Inc., Jacksonville, FL
February 1993 to May 1993

Vice President of Research and Development. Complete responsibility for direction and management of DDI's MICR-based laser check printing products and multifunction technology that integrates a PC, FAX, laser printer, and scanner in a single unit. Defined multiplatform strategy to enable DDI's MICR-based laser check printing products for Windows 3.X, OS/2 and Windows NT, and managed development team. Put in place software architecture for enabling multifunction systems combining PC, FAX, laser printer, and scanner capabilities to run off-the-shelf software in the Windows 3.X, OS/2, and Windows NT environments.

IBM Corporation, Boca Raton, FL

August 1983 to July 1992

1991-1992: Technical staff for OS/2 programming area. Resolved key design and implementation issues for OS/2 2.0 delivery. Provided technical and strategic briefings for customers. Technical interface to trade press and independent software vendors. Provided technical direction for implementation of OS/2 multimedia extensions. Performed advanced technical research and prototyping for future systems. Also represented IBM in a consulting capacity with IBM customers throughout the world who are moving to the OS/2 platform, and as a speaker at OS/2 technical seminars and public forums.

1987-1991: Lead architect for 32-bit version of OS/2. Includes overall design responsibility for kernel, subsystems, 32-bit API, compatibility architecture, and performance. Implemented prototype 32-bit systems and provided new designs in multitasking, memory management, interprocess communications, and compatibility areas. Provided high-level and low-level design documentation, complete product specifications, invention disclosures, and patent filings.

1985-1987: Lead developer for the design, development, and testing of 16-bit OS/2. Main areas of responsibility include device drivers, memory management, debugging, queues, DOS compatibility, system initialization, and ABIOS support.

1984-1985: Responsible for the development and testing of several products in the IBM Engineering/Scientific software series. Included testing of a DOS-based FORTRAN compiler, and development and testing of DOS device drivers for IEEE-488 (GPIB) card and Data Acquisition card. Also led the effort to redesign the device driver architecture and interrupt manager of IBM PC/XENIX 2.0 for the Intel 80286 processor, and developed and tested several XENIX device drivers.

1983-1984: Demonstrated and wrote scientific application programs for the S/9000 microcomputer under the CSOS operating system. Ported mainframe applications from major research centers to the S/9000 for benchmarking and testing in a microcomputer environment. Interfaced the S/9000 to several analog measuring instruments utilizing the IEEE-488 bus.

Operating Systems:

DOS, Windows 3.X/95/98/Me/ NT/2000/XP, UNIX/Linux, OS/2, NeXTSTEP, OS9, OS9000, pSOS, QNX, MDSOS, MEMOS, eCos, VxWorks, Android.

Processors:

All Intel x86 processors, i8051, DEC PDP-11, VAX-11, and Alpha, Motorola 6800, 68000, 683xx, and PowerPC, ARM7 and ARM7T (Thumb), Zilog Z80, MIPs, other RISC and embedded.

Languages and Technologies:

Assembler (most of the above processors), C, C++, Objective-C, Java, Fortran, PL/1, Pascal, Prolog, BASIC, UML, HTML/XHTML, CSS, PHP, Perl, MySQL, Ruby, Ruby On Rails, CakePHP, JavaScript., SOAP, XML-RPC, Lego Mindstorms.

Patents:

"Per Thread Exception Management For Multithreaded Multitasking Operating Systems", Patent #5,305,455, IBM Corporation, April 19, 1994.

"System And Method For Handling A Segmented Program In A Memory For A Multitasking Data Processing System Utilizing Paged Virtual Storage", Patent #5,539,899, IBM Corporation, July 23, 1996.

Inventions:

"Semaphore Architecture For Multithreaded Multitasking Operating Systems", **IBM Technical Disclosure Bulletin**, September 1991.

"Dynamic Stack Management In Multitasking Multithreaded Operating Systems", **IBM Technical Disclosure Bulletin**, September 1991.

"Application Migration From A 16-bit Segmented System To A 32-bit Nonsegmented System", **IBM Technical Disclosure Bulletin**, September 1991.

"Executable Format For 32-bit Personal Computer Systems", **IBM Technical Disclosure Bulletin**, August 1991.

"OS/2 Memory Suballocation Compatibility In A Paged Environment", **IBM Technical Disclosure Bulletin**, March 1992.

"16-bit OS/2 Fast Safe Semaphore Compatibility In A Paged Environment", **IBM Technical Disclosure Bulletin**, October 1991.

"OS/2 Thread Termination Architecture And Mechanisms", **IBM Technical Disclosure Bulletin**, August 1991.

"Reducing Interrupt Latency In A Multitasking Multithreaded Operating System", **IBM Technical Disclosure Bulletin**, July 1991.

"Memory Protection In The Flat Memory Model", **IBM Technical Disclosure Bulletin**, October 1991.

"Portable Semaphore Architecture For Multithreaded Multitasking Operating Systems, **IBM Technical Disclosure Bulletin**, October 1991.

"OS/2 1.X Compatibility In The OS/2 2.0 Environment", **IBM Technical Disclosure Bulletin**, October 1991.

"High Performance Thread Block/Wakeup Mechanism", **IBM Technical Disclosure Bulletin**, July 1991.