



F. Scott Deaver

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SKILLS SUMMARY:

I have over thirty years of professional programming experience with stand-alone and networked PCs. That experience includes (some time frames overlap): three years assembler, thirteen years general C, 18 years Windows SDK, and sixteen years Visual C++ working with the Microsoft Foundation Classes, COM and ATL. I have three years recent experience with C# (.NET) and managed C++. I have had a large number of short-term contracts as a debugging specialist, solving Windows programming, implementation, design, and networking problems for several national corporations in a variety of applications and situations. I've also held long-term assignments in intense leading-edge development environments. I enjoy a reputation for completing projects on time, and within budget and design specifications. My recent projects have involved more design and project lead responsibilities commensurate with my experience.

RELATED INTERESTS:

I have excellent creative problem-solving skills and have developed substantial intellectual property in my own name – please see the list of patents applied for and pending at the end of this resume. I also enjoy writing, and have published a number of blogs on both technical and non-technical subjects.

EMPLOYMENT HISTORY:

- **Certitude Digital, Inc.**, San Diego, California –
Acting CEO, CTO, founder, and inventor of a number of innovative patented and patent-pending technologies to solve cybersecurity issues (see patents section below).
- **Union Bank**, San Diego, California –
Senior software engineer (contractual) April, 2016 to June, 2016. Wrote and deployed C# and native C++ hybrid solutions to consume WSDL web services from native C++ applications. Wrote C# and native C++ hybrid solution for Kerberos authentication.
- **Tillster**, San Diego, California –
Senior software engineer September, 2015 to April, 2016. Worked on point-of-sale applications serving Internet customers and mobile devices for the fast food industry (Burger King/Yum Brands/BaskinRobbins), generally including C++ and C# SOAP wrappers to vendor POS tools (NCR and Micros) so they can be accessed from Web apps through SOAP or REST protocols.
- **Spectral MD**, Dallas, Texas –
Software engineer (contractual) February, 2015 through May, 2015. Designed and developed the data access layer, camera driver wrapper, algorithm interface, and test GUI for their state-of-the-art DeepView medical imaging device.
- **Thread Check, Inc. /Osborn Products, Inc.**, Ronkonkoma, New York/Phoenix, Arizona –
Software engineer (contractual) October, 2014 to February, 2015. Designing and developing screw thread and gauge software to test and certify production equipment and end products for standards compliance.
- **Two's Complement LLC/Partnership of James Cardle and Scott Deaver**, Houston, Texas –
Software engineer October, 2013 to present. Developing demonstration software in support of numerous utility patents issued recently from patent applications originating in 2008 and 2009, in C# (WPF) and C++ using Visual Studio. Products in development included OrgOptics (<http://www.OrgOptics.com>) and Certitude (<https://www.CertitudeDigital.com>). The multiply-patented enterprise-wide OrgOptics system is the world's first and only fully-automated, culturally-sensitive internal talent and risk identification, morale assessment, asset security, and information flow and efficiency analysis tool designed from the ground up to support business owners, management, and human resources professionals. Certitude is a patent-pending revolutionary approach to intellectual property and general security for applications, scripts, code snippets, and documents.
- **Realtime Oilfield Technologies**, Houston, Texas –
Software engineer (contractual) June, 2013 to October, 2013. Worked on new C# (WPF) desktop application for selecting and filtering, viewing, and reporting real-time data collected by down-hole tools manufactured by Realtime. Developed interfaces to other manufacturer's tools as well as industry standard data storage and transmission formats.
- **PDS Americas**(1177 Post Oak Boulevard),Houston, Texas –
Software engineer January, 2013 to May, 2013. PDS Americas is a Dutch Shell software partner, which produces extension modules on top of Shell extensions to Schlumberger products such as Petrel and Techlog, mostly in Qt C++ library extensions and Python scripts.

◦ **Halliburton/Landmark** (2107 City West Boulevard), Houston, Texas –
Software engineer (contractual) December, 2012 to January, 2013. This was a five-week project (later reduced to four weeks) for Halliburton/Landmark writing an Android application to mimic an experimental iOS project for basic drilling calculations using the Android SDK and MonoDroid. Monodroid is a set of wrappers around and libraries for C# WPF provided by Xamarin.

◦ **ExxonMobil** (Greenway Plaza), Houston, Texas –
Software engineer (contractual) February, 2011 to September, 2012. I worked on the design and development of a new assisted history match application as an EMpower (ExxonMobil's reservoir analysis application) view. I re-wrote a number of scripts into C++ objects for use by the program, developed new special-purpose tools and generic objects (volume of interest, property calculation), and provided C++, managed C++, P/Invoke, and shared-memory DLL interfaces to the Empower backend database and existing C++ code. I worked with OpenInventor (and by extension OpenGL) to visualize reservoir data points for a portion of my code.

◦ **GE Healthcare**, Plano, Texas –
Software engineer July, 2010 to December, 2010. Re-design, re-factoring, debugging, and repair of Centricity, GE's multi-component healthcare practice management and charting application (C# Webforms and Winforms as WPF, COM, Visual C++ 2008, Visual Basic, SQLServer 2008, and ClearCase/ClearQuest).

◦ **Two's Complement LLC**, Houston, Texas –
Software engineer February, 2010 to July, 2010. Design and implementation of an enterprise SAAS/cloud-based Windows desktop security application suite (primarily Visual C++ 2010, Team Foundation server 2010, some C# as WPF).

◦ **Weatherford (ep-Solutions.com)**, Houston, Texas –
Software engineer August, 2008 to February, 2010. I was the senior member of a team built to upgrade the LOWIS (Life of Well Information Services) product to modern languages and compilers. I built a custom detached logging class for them based on my personal intellectual property to enable discovery of how some poor-quality code was actually behaving (as opposed to design intent). I designed a number of multi-threaded and shared-memory custom solutions for several legacy issues, especially management of asynchronous peer processes (externally detecting and reacting to unexpected process exits), and developed strategies for fixing an old hand-coded and buggy custom database that was at the core of the technology. I helped migrate the solution from a collection of CygWin make files, batch files, and scripts to the VS2008 development environment. I produced a strategy for documenting old source code, and I created a VS2008 emulation of the C# '///' documentation macros for use with legacy (unmanaged) C++ code. I mentored staff and pushed for standards, process, quality, testing, UNICODE, documentation, and validation in the code production environment (primarily Visual C++ 2008).

◦ **ICS, Inc. (CommandSystems.com)**, Houston, Texas –
Software engineer March, 2008 to August, 2008. Wrote a number of communications modules in C# WPF (reliable UDP send/receive, SNMP, and Modbus ASCII/RTU/TCP) for the SCADA version of a high-performance video and security monitoring system. Created a master build environment for all projects, helped migrate the projects to Team Foundation Server, and wrote logging and event handler modules for the system (primarily Visual C++ 2008).

◦ **SysInformation, Inc.**, Houston, Texas –
Software engineer January, 2008 to March, 2008. Updating and debugging legacy C and C++ code (primarily Visual C++ 6.0/2005).

° **Smith International, Inc.**, Houston, Texas -

Software engineer August, 2007 to December, 2007. Created C# module for calculating drill string torque and drag (hybrid soft string/stiff string model) and expressing it as Dundas Charts and 2D/3D XAML (on WPF) graphics of the wellbore and drill string, using .Net Framework 3.0, CAB, SCSF and beta Acropolis tools. 4-person team, Visual Studio .Net 2005, Team Foundation Server 2008, SQL Server Express, Infragistics and Dundas controls (primarily Visual C++ 2005).

° **Emerson Process Management, Inc.**, Houston, Texas –

Software engineer December, 2005 to August, 2007. Wrote custom XML parsers, an FTP client, TCP/IP and dialer communication routines, and numerous utilities in support of a Visual C++ Windows interface to automated and manual gas chromatograph viewers and controllers (primarily Visual C++ 6.0/2003).

° **Continental Airlines, Inc.**, Houston, Texas –

Software engineer July, 2005 to December, 2005. Porting of JCL/PL1/DB batch process code to a threaded VC++/ProC (Oracle) object-oriented implementation. Technologies used include Visual Studio .NET 2003 unmanaged C++, C# WPF, ProC, ProLiant P11, and a variety of scripted automation tools. My principle role is to develop techniques and implement solutions in code for unique problems as they crop up in the porting process (primarily Visual C++ 6.0/2003).

° **ProSys, Inc.**, Baton Rouge, Louisiana –

Software engineer May, 2004 to June, 2005. Designed and implemented the framework for an OPC-based (OLE for Process Controls - www.OPCFoundation.org) custom-configurable near-real-time enterprise solution for control and monitoring of processes (as used in petrochemical plants, manufacturing facilities, and power-generation facilities). This solution leverages the efficiencies of DCOM/COM+/threading and IP communications in a multiply redundant environment to achieve process automation, alarm and data change notification, and operator/engineer intervention in very fast time increments with minimal downtime and assured performance. The tools used include the OPC COM components, ATL, dual-interface DCOM/COM+, Visual C++, managed C++, C# WPF, and TCP/IP in the .NET 2003 IDE.

° **Hewlett-Packard**, Houston, Texas –

Software engineer March, 2004 to May, 2004. Designed and wrote a small database, dual interface COM component, and MFC GUI data viewer application to support their distributed product replacement initiative (to replace defective memory modules in notebook computers). The COM object and database were critical to and interacted with four other projects written by other team members, and the GUI was written to support both non-technical consumers as well as technical product distributors (primarily Visual C++ 6.0/2003).

° **Code Closet (www.codecloset.com), FailSafe Designs (www.failsafedesigns.com)**, Houston, Texas –

Software engineer September, 2003 to March, 2004. Designed, patented, wrote and tested ‘Caller ID for E-mail’, a consumer anti-SPAM application which conducts an automated interview of e-mail senders on behalf of the receiver (complete turnkey development). This application works with Outlook Express, and demonstrates significant reverse engineering, threading, hooking, and process control skills as well as a complete mastery of the Windows GUI environment (including remote control of an external application using its own process thread). Written in Visual C++ using Visual Studio .Net 2003, with the MFC and ATL libraries and Platform SDK, the application uses MAPI, SMTP, COM, MSMQ, encryption, parsing, WinSock, and compression technologies. Co-tangent applications used include RoboHelp Office x3, Installshield 7.0, Software Shield, DreamWeaver MX, and Adobe PhotoShop. This application also features a robust demonstration of my documentation and communication skills in the help component (downloadable separately from the www.failsafedesigns.com). The help component also describes the unique capabilities of the application, including screenshots.

Note: This is the technology represented by patent applications filed by me in January, 2003 and January, 2004 plagiarized by Microsoft and announced as their own on February 14, 2004. In addition to the intellectual property, the theft included the name 'Caller ID for E-mail', for which I owned the federal trademark application (I also owned the domain 'CallerIDForEmail.com').

◦ **ChevronTexaco**, Houston, Texas –

Consultant April, 2002 to September, 2003. Revamped GUI base classes and inheritance hierarchy for rapid development of WYSIWYG reports generated on drilling sites using Visual C++ 6.0, ADO, and a small COM component.

◦ **Hilton Hotels**, Memphis, Tennessee –

Consultant August, 2001 to April, 2002. Acted as on-site Windows expert for the mass migration of several third-party business-critical applications back to Hilton hosting and control. I analyzed and documented existing source code obtained from the vendor, drew up implementation plans for the cutover, and consulted to other Windows projects on-site (primarily Visual C++ 6.0).

◦ **Continental Airlines**, Houston, Texas –

Contractual software engineer January, 2001 to August, 2001. I designed, wrote, and implemented a COM+ app-server hosted middleware component for their Customer Care product. The middleware features pooled ADO connections to the CoStar Oracle database, and proprietary API interfaces to an Altris document retrieval system and Staffware flow management software. I used MSMQ API calls to route and temporarily store messages between potentially offline components. The code (primarily Visual C++ 6.0) supports security and load-balancing requirements for the system as well as a variety of interfaces to other products (One-Pass and Baggage) as well as to other third-party applications (notably Brightware and Exchange Server).

◦ **American Buildings Company**, Eufaula, Alabama –

Contractual software engineer October, 2000 to December, 2000. My responsibilities included redesigning and implementing the logistics component (security, data transport and storage, and transaction tracking) for a distributed building engineering application. The tasks placed heavy emphasis on my Winsock, NT security, Stingray Objective Toolkit and Objective Grid, Visual Studio C++ 6.0, MFC, and general C++ skills as well as learning the ObjectStore database product.

◦ **ExxonMobil Upstream Research Center**, Houston, Texas –

Contractual software engineer April, 2000 to October, 2000. Complete overhaul of previously stalled yearlong attempt to consolidate all proprietary drilling applications onto a single framework. Some of the tasks performed by the application include calculating hole and casing geometry, hole cleaning, well-bore separation, stability, and collision prediction, torque/tension analysis, pressure flow testing, survey management, mud pump selection, friction coefficients, and stuck pipe risk analysis (note that the actual formulas used in the calculations are proprietary to and supplied by ExxonMobil oilfield engineers - my task was to provide the GUI framework, workflow, results management and reporting mechanisms, as well as ensuring intuitive interaction between the tasks and their interfaces). I designed a unique data-driven solution which was enthusiastically received in prototype form and which I then implemented along with their remaining in-house staff. Management liked the prototype enough that other projects, notably LRFD, are being added to the suite. Skills utilized included Visual C++ 6.0, COM, ATL, MSMQ (for message delivery between components), Rational Rose 2000i, MFC, and Stingray Objective Toolkit and Objective Grid. I worked with OpenGL to display portions of the drilling string.

◦ **Schlumberger GeoQuest**, Houston, Texas –

Contractual software engineer April, 1999 to April, 2000. GUI and captive data design, coding, implementation, testing, and documentation of Windows NT 4.0 oilfield well-plan application (TDAS 6.0). Included large Stingray Objective Toolkit component and extensive SDI/MDI message rerouting to support multiple child window layers/ docking windows metaphor. Skills utilized included Visual C++ 6.0, MFC, ATL, COM, MSMQ (for message delivery between components), and Stingray Objective Toolkit and Objective Grid.

◦ **JFL Communications (Sola)**, Stafford, Texas –

Contractual software engineer August, 1998 to April, 1999. I was responsible for turnkey design, coding, implementation, testing, and documentation of Win32-based satellite uplink rain-fade attenuation software to complement their proprietary hardware and network innovations. The project featured heavy WinSock 2 low-level development and systems resource management/tracking emphasis for hosts in a closeted unattended environment. I also rewrote their TAPI automated alarm notification software. This software used redundant Dialogic voice/telephony cards and the Dialogic API set to detect and react to carrier and DTMF tones and voice presence or absence. I wrote into the software the unique ability to fail over to the backup Dialogic board if periodic self-testing of the primary board indicated a problem with the board or the line to which it was connected. I wrote a simple port 80 listen application that received alarms from routers and attached satellite uplink modems and then used the Dialogic APIs to dial up the on-duty technicians with pre-recorded voice notifications. The IP host could also accept instructions decoded from the backup Dialogic board's DTMF tone detection (the board could be called up from any land line and the caller validated through DTMF passwords) which it then passed back to the routers and/or satellite modems. Skills utilized included Visual C++ 5.0 and 6.0, and the MFC.

◦ **Sulzer Intermedics**, Angleton, Texas -

Contractual software engineer June, 1998 to August, 1998. Proposed, designed, and for the most part implemented an innovative advanced design solution for a component of their GUI to speed up data acquisition for programming patients' pacemakers. Worked with Rational Rose 4.0, Visual C++ 5.0 and the MFC using Zinc libraries as a cross-platform project initially developed in Win32, and ultimately ported to PSOS.

◦ **Tuboscope**, Houston, Texas -

Senior software engineer, April, 1998 to May, 1998. Updated components of their oilfield pipeline inspection software to Win95 as a member of a small programming team. Skills utilized included Visual C++ 5, OpenGL (for modeling interior pipe data to an external pipe view) and the MFC.

◦ **Metro IS/Enron Energy Services**, Houston, Texas -

Contractual employee April, 1998. I prepared and prototyped low-level object-oriented Win32/ANSI 2.1 C++ designs for automated communications from residential electric metering devices using the SkyTel paging network. Provided much-needed advice and support to the client liaison on the proper construction and implementation of a multi-tasking environment and corresponding object behaviors. Skills utilized included Visual C++ 5 and the MFC.

◦ **Lockheed Martin**, Clear Lake/Houston, Texas -

Contractual employee September, 1997 to April, 1998. This assignment is a reprise of the work I did for the space shuttle, but for the space station instead. In addition to designing and production of the software, I was responsible for training a Lockheed Martin permanent employee to maintain and expand the programs into the future. The remodeling of the object components went more quickly than scheduled, and my portion of the work was completed and tested in late March. My associate implemented the completed project following a full testing cycle ending in June.

◦ **Compaq Computers**, Houston, Texas -

Contractual employee August, 1997 to September, 1997. Design, development, and maintenance of mission-critical data analysis and decision support software. These Visual C++ 5.0 and MFC-based applications directly supported Compaq's change of their business model to a build-to-order format.

◦ **Lockheed Martin**, Clear Lake/Houston, Texas -

Contractual employee August, 1996 to August, 1997. Designed, engineered, programmed, implemented, and documented the software component (hardware management, control, and monitoring) of the Air/Ground Voice System (AGVS) for the space shuttle program at NASA. AGVS manages voice transmission and delay compensation for all of the various signal paths used to communicate with the shuttle. Worked closely with hardware engineers and vendors to extend the reach of NT to embrace new devices, and thoroughly exercised many of the Win32 APIs for NT: SNMP (agent and management), command-channel MIDI, extended-port RS-232, Winsock2, and low-level DDE. Intensive work with third party devices and drivers, including DSP devices, National Instruments data collection devices, the WinStar pass-through generic device driver, audio channel switchers, audio delay devices, and alarming/warning mechanisms. Elements of the design included enhanced security, redundancy in all systems, and tight resource monitoring and control typical of a mission-critical application. Written in Visual C++ 4.2 for NT version 3.51, service pack 5, this software and its related hardware will manage shuttle voice communications NASA-wide for the next ten years, and the components will also be used in a modified international GUI to manage space station voice communications. Skills utilized included Visual C++ 5 and the MFC.

◦ **BMC Software**, Houston, Texas -

Employed January, 1996 to August, 1996 as Product Developer. The Patrol product was in the process of being expanded from UNIX to other environments, and I served as the primary NT technical resource for the Patrol support organization. I also consulted to the core developers on Win32-specific issues such as thread synchronization and data management, security and user rights, the registry, and system objects. I provided utilities and support for SQL Server as related to the Patrol product. My duties varied extensively on a daily basis, dependent upon the needs of the organization. As the most experienced NT developer and for a long time the only proponent of NT as an operating system among the technical staff, I become involved in virtually any technical discussion of NT as a development platform, operating system, or LAN component. My main responsibility was to write patches and utilities as well as determine best courses of action in response to problems encountered in field implementation of the product by customers. Development was through the range of Microsoft products from Visual C++ 2.1 through 4.1 and included the MFC.

◦ **American Express**, Houston, Texas -

Employed December, 1995 as an outside contractor to design and implement the WinSockets 32-bit Visual C++ 4.0 communications host for their distributed-platform travel reservation and ticketing product.

◦ **FutureSoft**, Houston, Texas -

Employed as an outside contractor November, 1995 to December, 1995 maintaining and upgrading their DynaComm line of communications products for Windows 95 in preparation for the next scheduled release. Performed a wide variety of repairs and enhancements to both 16- and 32-bit product versions in Visual C++ 1.52 and 2.2 utilizing my knowledge of the MFC.

◦ **BancTec/Recognition**, Dallas, Texas -

Employed as an outside contractor October, 1995 to November, 1995. Wrote Visual C++ 1.52 and 2.2 stub and user interfaces to their SDMP (Self-Described Messaging Protocol) libraries for communicating

between modules (recognition engine, transports, and hardware) and environments (Unix, Windows 3.1x, and NT). Rewrote and extended the shared C++ wrapper to their third-party TIFF decompression library.

° **VCON**, Dallas, Texas -

While working fulltime at AT&T, I also worked part-time on speculation developing a GUI front end and display port for this Israeli firm's proprietary 128-384K H.320 codec daughterboard hardware. I wrote the software that managed over/under-run real-time image control through IRQ-level signaling to the board, and wrote the Motion JPEG, RIFF (using the Microsoft multimedia extensions API), and VCON proprietary format storage functions. I partially implemented an MCI translation layer to the codec device driver. I donated my time to the project in hopes of a return when ultimately successful. However, problems integrating the hardware with the PCI bus, investor funding issues, and management indecision as to the final software product specifications made it impractical to continue after a little over four months of effort. Though I never received a penny for my efforts, it was one of the most enjoyable and challenging projects with which I've been involved.

° **AT&T GIS/JCPenny Customer Focus Team**, Richardson, Texas -

Employed as an outside contractor May, 1995 to October, 1995. I was the Windows NT technical resource for the sales team. If the task was technical and in any way pertained to Windows NT, I did it. I wrote automated setup scripts and utilities (in Visual C++ 2.1 using the MFC and Visual Basic), administered the LAN, programmed and debugged software (both ours and the client's), and provided software engineering analysis and consultation. I did capacity planning support, software evaluation, problem resolution, and hardware installation, setup and support (as it applied to AT&T products).

° **General Signal/Edwards System Technologies**, Sarasota, Florida -

Employed as an outside contractor February, 1995 to April, 1995. Wrote the high-level design specification for the mapping/data entry Windows 3.1 Visual C++ component of their latest life safety system (EST-3). I collaborated in the review and revamping of the system design utility (SDU) component.

° **MCI**, Richardson, Texas -

Employed as an outside contractor October, 1994 to February, 1995 developing a geographic information system (GIS) hardware/software package for their construction division. I designed and wrote a notebook-based Windows 3.1 GPS receiver/laser range-finder/cellular modem utility that enabled real-time site acquisition positioning and correction in remote locations to support their PCS project. This was a Visual C++ 1.5/2.0 product using the new communications API functions and MFC extension classes. It also included database support for Oracle at the base station as well as Access 2.0 ODBC support for the notebook. While waiting for funding approval for the completion of that project I did some MDL programming for their EDGE MicroStation graphics utility, and Odesta document management script programming accessing Oracle 7.0.

° **Tandy Information Services**, Fort Worth, Texas -

Employed as an outside contractor July, 1994 to September, 1994 designing a cross-platform C++ wrapper for generic SQL/92 databases. Extended the class hierarchy to include exception handling and numerous general-purpose classes for application to other products.

° **American Airlines Decision Technologies**, Irving, Texas -

Employed as an outside contractor February, 1994 to July, 1994. Designed and wrote a multi-threaded Windows NT 3.1 WinSockets (TCP/IP) communications host and attendant Windows NT and Win32s client access *.DLLs for their real-time StaffManager decision support package using beta Visual C++ 2.0, the MFC libraries, and beta Windows NT 3.5. Integrated an application-specific protocol layer developed in cooperation with other staff.

◦ **Fisher Controls**, Marshalltown, Iowa -

Employed as an outside contractor July, 1993 through January, 1994. In addition to my responsibilities to produce finished code, I was responsible for re-engineering the flagship Windows 3.1 spreadsheet module for their suite of valve-sizing programs in Visual C++ and using the MFC libraries for the GUI. That responsibility grew to include complete overhaul of the dual-platform user-accessible calculation engine foundation .DLL upon which all Fisher sizing modules depend. I provided staff training in Windows and C++ and was heavily involved in every phase of the design process for the next release version. I also provided general design, programming and Windows guidance to other project teams as needed.

◦ **Merit Technology**, Dallas, Texas -

Employed as senior software engineer January, 1993 to July, 1993. Wrote and designed modules for their MapLinx commercial mapping product and supervised three staff members in producing the first marketing channel release. Encouraged and implemented the conversion from Borland and Microsoft 6.0 compilers to Microsoft 7.0 and C++. Set up version control, coding and interface standards, and product benchmark testing. I was generally responsible for bringing shareware-grade code produced by a single individual in England into a professional team-oriented environment, resulting in commercial success.

◦ **Coopers and Lybrand**, Dallas, Texas -

Employed as an outside contractor September, 1992 to December, 1992. Wrote a number of test programs to automate Lotus Notes replication and e-mail delivery through internal Windows message interception and handling. Wrote a number of shared custom Windows 3.1 controls .DLLs for the audit package.

◦ **Practitioner's Publishing**, Fort Worth, Texas -

Employed as an outside contractor July, 1992 to September, 1992. Performed emergency surgery on a Mewel Libraries (DOS character-based Windows messaging emulation) auditing package.

◦ **DacEasy**, Dallas, Texas -

Employed as an outside contractor May, 1992 to July, 1992. Polished and massaged prototype code produced overseas into the framework for the DacEasy Lite accounting package.

◦ **Wal-Mart General Offices**, Bentonville, Arkansas -

Employed as an outside contractor January, 1992 to May, 1992. Designed and wrote a package consisting of server and remote workstation programs and utilities to insure fail-safe automated transfer and logging of critical files between a Unix fileserver and Windows remote workstations. The package included TCP/IP FTP and NFS transfer protocols using the beta NetManage API's, a proprietary real-time transaction and error reporting and examination scheme, standalone dialup and FTP login .DLL's, automatic runtime utility execution on the remote workstation of Windows .EXE's stored on the Unix box, full transfer verification from moment of storage on the Unix box to final receipt by the workstation, self-correction of critical errors, and pre-transfer processing to maximize efficiency and minimize transfer time.

◦ **Innovatech Concept Development**, Des Moines, Iowa -

Undertook a number of consulting and programming assignments related to Windows projects for several clients from February, 1991 to December, 1991, including: **Mutual of Omaha Claims Processing**, Omaha, Nebraska; **Principal Financial Group** (several departments), Des Moines, Iowa; **EnviroSoft**, Omaha, Nebraska; **Anderson Brothers Plumbing and Heating**, Kearney, Nebraska; **Perkins Restaurants** (POS), Minneapolis, Minnesota; and **IBT**, Kearney, Nebraska.

◦ **CE Software**, West Des Moines, Iowa -

Employed as a software engineer January, 1990 to February, 1991 where I designed, programmed, debugged, and QA'd DOS and Windows 3.0 programs for retail sale primarily in "C" (minor assembler)

as part of a five-member development team. My principal function was developing Windows 3.0 utility programs to complement CE's current line of MacIntosh programs. My responsibilities included QuickKeys PC, upgrading CalendarMaker PC and IconMover to Windows 3.0, and co-authoring QuickMail utilities and accessories.

° **Legal Services Incorporated**, Des Moines, Iowa -

Contractual programmer from June, 1989 to January, 1990, developing a specialized legal relational database for attorneys in "C" with sole responsibility for all aspects of the project, including documentation, forms design, program design, programming, debugging, QA, support, and packaging. The program was used as a model for an experimental pilot project allowing attorneys to file standardized legal forms electronically from their offices with county and district courts. Of special consideration were security (encryption and access filtering) and meeting the proposed standards and tests for signature facsimile and transmission then under consideration by the Iowa Bar Association for submission to the Iowa Supreme Court.

° **Micro Software Solutions/Computer Supply Store (CSS)**, Des Moines, Iowa -

Employed as programmer June, 1988 to June, 1989 working in partnership with Sean Stokely developing an in-house management/database package in "C" and assembler under DOS and fully implementing NovellDOS I/O. Included design, programming, debugging and QA responsibilities. My principal function was writing a comprehensive service department management program to integrate with an existing custom inventory/ accounting package for the Computer Supply Store's Novell Network version 2.12A. Features included personnel time scheduling and management; automatic parts and time costing, discounting, billing, and forms; invoice and service ticket tracking; inventory-sharing and cross-balancing with the existing sales package; and transaction-tracking and access control within multiple security levels.

° **Des Moines Public Schools**, Des Moines, Iowa -

Taught "Intro to PCs", "Intro to C", and "Intro to Basic" for the Department of Community/Adult Education for several terms from September, 1986 to December, 1988 (part-time night position).

° **Innovatech Concept Development**, Des Moines, Iowa -

Self-employed as mechanical design specialist working towards marketing and sale of developed patents from June, 1986 to June, 1988 in cooperation with CIRAS and the Iowa Economic Development Commission. In addition, created custom EEPROM programs and hardware for computer-controlled devices for industry (principal client was Carpenter Uniform, Des Moines, replacing 6502 chips for Japanese embroidery equipment).

° **State of Iowa/Department of General Services**, Des Moines, Iowa -

Supervisor of the micrographics section (microfilming and storage of classified/sensitive documents) from September, 1985 to June, 1986. In this position I became familiar with transfer of microfilm to computer tape (coincidentally also known as COM for Computer Optimized Micrographics), and developed knowledge of computer graphics and data storage, ultimately deciding to make a career change when my position was eliminated during state government reorganization.

° **Innovatech Concept Development**, Cumming, Iowa -

Self-employed as the inventor of the electric construction nail gun, pursuing patents and building prototypes from March, 1979 to August, 1985.

Employment history prior to March, 1979 available upon request.

PATENTS/PATENTS PENDING:

- Electric construction nail gun (expired), 1984
- Electric construction nail gun (improvements, expired), 1985
- Caller ID for E-mail (#60/439829, assigned), 2003
- Caller ID for E-mail (#78/222445, improvements, assigned), 2004
- Methods for monitoring usage of a computer (#12571291), 2009 (issued as U.S. Patent #84357347 on June 4, 2013)
- Methods for digital image compression (#12571308), 2009 (issued as U. S. Patent #8494288 on July 23, 2013)
- Preprocessing of grayscale images for optical character recognition (#12638915), 2009 (issued as U.S. Patent #8,761,511 on June 24, 2014)
- Monitoring usage of a computer by performing character recognition on screen capture images (#13868055), 2009 (issued as U. S. Patent #8675910 on March 18, 2014)
- Monitoring the emotional state of a computer user by analyzing screen capture images (#14273861), U. S. Patent application (filed on May 9, 2014)
- Methods and related apparatus for managing access to digital assets – provisional (#62104831), U. S. Patent application (filed on January 18, 2015)
- Non-invasive full body dermal imaging device – Christmas gift to James Cardle December 25, 2015
- Apparatus and methods for digital asset protection – provisional (#62438921), U. S. Patent application (filed on January 19, 2016)
- Methods and related apparatus for managing access to digital assets – utility (#15,000,186), U. S. Patent application, filed on December 23, 2016 (issued as U.S. Patent #9,996,680 on June 12, 2018)
- Methods and related apparatus for managing access to digital assets, (#15978040), U. S. Patent application, utility, continuation-in-part (filed on May 11, 2018)
- Methods for controlling access to digital assets (#16004867), U. S. Patent application, utility, continuation (filed on June 11, 2018)

ASSOCIATIONS:

- One of the original members of the Microsoft Solutions Provider program (Level II)
- Current Microsoft BizSpark member
- Microsoft Partner Research Panel panelist

EDUCATION:

- **Grand View College**, Des Moines, Iowa.
Course work towards liberal arts degree from 1977 - 1979. Major: Pre-law.
- **Des Moines Area Community College**, Ankeny, Iowa.
Credit and non-credit hours in computer sciences, management, and general business.
- **Microsoft University**, Redmond, Washington.
Series of courses presented prior to release of Windows 3.0 and C 6.0. Continuing education through MS videotapes and correspondence offerings, and through presentations by third-party vendors.
- **American Research Group**
Training in the essentials of ATM communications protocols.
- **NetG Microsoft Certification Series**

° **Sybex Network Press MCSE Study Guides**

Currently preparing and testing for Microsoft certification.

MILITARY SERVICE:

Honorably discharged Vietnam-era veteran, U. S. Navy (Aviation Administrationman) 1972-73.

REFERENCES: Available upon request.