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SUMMARY

- **Education:** B. S. Electrical Engineering, M. S. Electrical Engineering, Ph.D. Computer Science
- **Areas of expertise:** computer vision, image processing, signal processing, computer graphics, systems programming, and client/server applications.
- **Programming environments:** Unix, X-windows, and GL. MS-DOS and Windows.
- **Programming languages:** Expert C/C++. Current work with JavaScript, VBScript, SQL. Others: Pascal, FORTRAN, BASIC, Lisp, APL, Ada, 680x0 assembler, 6800 assembler, TMS32010 assembler, and 8085 assembler

EDUCATION

Ph.D. Computer Science, May 1996. Dissertation: "Autonomous Construction of Three-dimensional Models from Range Data." Developed a method for combining range-image data from many different viewpoints to generate a spline surface-patch model of an object. Features were then extracted from the model which were used for object recognition. The system also included an SGI GL GUI to display the various representations used during the process. Developed an autonomous wool fiber measurement system which processed visible-light images from a microscope to identify and measure wool fiber "snippets". This also had a GL GUI for displaying operation of the algorithm. Course work in: computer vision, computational linguistics, operating systems, and compiler construction.

M. S. Electrical Engineering, May 1985. Master's Thesis: "Digital Suppression of Acoustic Feedback in Hearing-aids." Used the LMS noise-cancellation algorithm to generate a real-time estimate of the hearing-aide feedback path which was then used to "subtract out" the feedback. This gave the hearing-aide about 13dB additional useable gain. Course work: image processing, digital filter design, random process theory, digital control systems, and acoustics.

B. S. Electrical Engineering, May 1981. Senior project: designed a hardware multiplier. Two semesters on Dean's honor Roll.

EMPLOYMENT

Wall Street on Demand, Boulder, CO (12/1999 – present). Software Engineer: Maintained and enhanced proprietary Distributed Computing Layer (DCL) libraries. Significantly improved reliability, performance, and functionality. Wrote DCL COM objects that allowed Visual Basic applications, web servers (IIS), JScrip, etc. to act as DCL clients. Wrote and maintained Automated Monitoring System (AMS) which provided real-time status monitoring and display for all DCL servers. Spearheaded transition from Microsoft/Dinkumware Standard Template Library (STL) to STLport resulting in dramatic improvements in reliability as well as substantial performance increases. Wrote and maintained several new components (servers) for the streaming alerts system. Designed and implemented the rules-engine for a rule-based error/problem detection and notification system. Helped maintain and enhance several internal web-based tools and applications. Used Microsoft Visual C++, STL, HTML, ASP, JavaScript, COM, Microsoft Visual SourceSafe, Microsoft SQL, Microsoft Visual Basic, winsock2 API, pthreads-win32.

John Costanza Institute of Technology, Denver, CO (6/1999 – 12/1999). Technical Staff Member: Wrote scripts and utilities to build FlowPower software and to support the JCIT development cycle. This required familiarity with Microsoft Visual C++, Microsoft Visual Basic, Microsoft Visual SourceSafe, InstallShield, COM/DCOM, and the Windows NT registry.

Carnegie Group Inc., Denver, CO (1997 – 6/1999). Senior Engineer I: Developer on Fetch 'N Stuff project which provided a uniform C++ object oriented interface to disparate USWEST legacy systems. Redesigned message classes to support multiple protocols, including an all ASCII protocol, while maintaining backward compatibility. Developer on CSRM, a variant of Fetch 'n Stuff. Designed and implemented C++ classes that allowed concurrent processing of multiple requests to efficiently support multiple selections on the front end GUI. Senior Engineer II: Chief Architect in training on Call Handling project which was responsible for routing calls to USWEST service centers. Added new subsystem to Call Handling to support non-routing requests. Responsible for architecture and design of new subsystem, and acted as tech lead during implementation and testing.

Lockheed Martin Astronautics, Denver, CO (1996–1997). Senior Software Engineer on MSTAR a radar target recognition system. Developed empirical MSTAR performance model. Part of five person team which ported MSTAR to a Cray T3E yielding $60\times$ speedup. Miscellaneous system integration and data analysis tasks including: system builds, writing and releasing patches, and writing programs to parse data files, extract performance data, and produce reports. Programming languages: C, C++, perl, csh, sh. Operating systems: SunOS/Solaris, Unicos/Mk. Programming tools: Khoros software development environment.

University of Wyoming, Laramie, WY (1989–1995). Research Assistant. Developed autonomous model building system. Developed automated wool fiber measurement system. Both these systems included GUI's built using SGI's GL and X-windows. System administration on two SGI workstations. Linux kernel "hacking" to improve serial port performance. Design and teaching of hardware labs. Taught MS-DOS, Wordperfect, Lotus 1-2-3, and dBASE III labs. Programming languages: C, Lisp, Pascal. Operating systems: IRIX, Linux, MSDOS. Programming tools: lex and yacc, SGI's GL.

Compu Systems Corp., Laramie, WY (1986–1988). Hardware Design Engineer. Designed prototype hardware for MC68000 based point-of-sale system. Wrote multi-tasking kernel for system terminals and a C library with standard C functions (printf(), etc.). Programming languages: C, 680x0 assembler. Operating systems: OS9, Uniflex.

University of Wyoming, Laramie, WY (1984–1986). Research Assistant. Implemented and tested real-time adaptive signal processing algorithms for a digital hearing-aid. Improved the intelligibility of speech in the presence of background noise. Increased the usable gain of the hearing-aid by 13 dB. Programming languages: FORTRAN, Pascal, TMS32010 assembler. Operating systems: PrimeOS, CPM.

Hughes Aircraft, Fullerton, CA (1981–1983). Member Technical Staff. Responsible for display-computer interface on radar prototype. Wrote data analysis programs to evaluate radar performance. Designed digital target velocity-vector calculation hardware. Wrote small program to simulate radar performance under various scenarios. Programming languages: FORTRAN, BASIC.

PUBLICATIONS

Leland C. Best, Robert Stobart, and Michael Magee. Fiber measurement using digital image processing. In *The Seventh International Conference on Industrial & Engineering Applications of Artificial Intelligence & Expert Systems*, 1994.

Leland C. Best and Michael Magee. Autonomous Low-level Model Construction. In *Proceedings of the Conference on Ladar/Radar Applications and Processing*, volume SPIE 2962-18, pages 172–181, San Diego, CA, Jul 13-14 1995.

Leland C. Best and Michael Magee. Autonomous Construction of Three-dimensional Models from Range Data. *Pattern Recognition*, volume PR(31), number 2, pages 121–136, 1998.

CITIZENSHIP

U. S. Citizen