# **EXPERTISE:** • Automatic Test Equipment • Industrial Control Systems

# • Software Engineering • Telecommunications

Software/Hardware

• LabVIEW, VB6/.NET, C/C++, Java, SQL, ADO/.NET, Excel

with emphasis on ATE, database development, digital imaging,

Telecommunications & LAN/WAN networking projects.

• VSAT and general satellite ground station services.

• Web development with VB & Java Script, ASP/.NET, ADO/.NET,

HTML, DHTML, .COM and XML

Protocols and Standards:

• HDLC/SDLC, BSC, Netware-SPX/IPX, TCP/IP, X.25, GPIB, v.25bis

v.32bis, v.42, MNP, ISDN, DDS, T1, 802.X, AppleTalk, LAN/WAN

MPEG-2, ATM, ATSC, SONET, ARINC 429, Mil Spec 1553

# **BACKGROUND:**

# **2002-Present Independent Consulting**

# **Certified LabVIEW Developer & National Instruments Alliance Member**

• Developed instrumentation to manufacturing test a USB conference telephone product. We used the Audio Precision APx515.

• Developed instrumentation to test product generated electro-cardiograms (ECG) for standards compliance verification.

• Developed instrumentation to test high powered laser based tattoo, hair and wrinkle removal systems.

• Developed instrumentation to monitor turbine vibration and the balance of plant for electrical generation facilities using cRIO.

• Developed instrumentation to test Optical Coherence Tomology (OCT) device for internal vascular imaging.

• Developed instrumentation to test high power invertors for electric vehicle conversion company.

• Developed instrumentation to do short range Radar Cross-Sectional (RCS) measurements from 10GHz to 40 GHz

• Developed instrumentation to test a blood management product at manufacturing

• Developed instrumentation to test DECT 6.0 cordless telephones at manufacturing time for the senior emergency alert market.

• Developed applications in support of Hyper-spectral imagers utilizing motion control and digital imaging.

• Built application for controlling Polymerase Chain Reaction (PCR) system for a medical device company.

• Built application for testing laser diodes (LIV & WL) with SQL data archive.

• Built application for testing high voltage power supply.

• Built application for testing high resolution motion encoders at manufacturing.

• Converted VB 6.0 application for tunable IR filters to LabVIEW.

• Built mySQL database, barcode scanning & printing chemical receiving and logging application in VB for a medical device company.

• Built mySQL database application for MEMS wafer incoming inspection in VB for a medical device company.

• Developed 3-axis Galil motion control with Sony Firewire video for microscopy for a medical device company.

• Developed testers for design time and manufacturing time testing of high power LEDs incorporating SQL server, Excel and some VB/VBA.

• Developed 2 systems incorporating thermistor monitoring, heater and motion control for automatic analysis of human fluids for a medical device company.

• Built tester for a C130 aircraft engine sensor monitoring and interface (ARINC 429) device utilizing LabVIEW real time, embedded, FPGA and PXI.

• Interfaced GE Fanuc 9030 and Versamax PLCs into LabVIEW using the OPC servers and the Data logging & Supervisory Control toolkit. This effort was applied to a space simulation chamber and a series of vacuum deposition chambers.

• Developed RS232 serial control interface into Excel using VBA for a paper mill sensor monitoring application.

• Developed a MEMS accelerometer/gyro & synchro-motor based platform stabilization system.

• Automated automotive oil and air filter testing using industrial sensors & controls, A/D, D/A, DIO, Mitsubishi FX PLC & LabVIEW

• Automated 4WD actuator life testing using LabVIEW s/w under windows

• Developed R&D time, instrumentation for the validation and verification of an implantable drug delivery MEMS device technique. i.e. pacemaker type battery and drug release mechanism testing for a medical device company. (OrCAD, LabVIEW, MathCAD)

# **2000 - 2002 TELLABS CORPORATION Burlington, MA**

# A manufacturer of telecommunications equipment

# **Staff Engineer**

# Responsible for the development and maintenance of DWDM fiber optic router product instrumentation

• Hands on, led the development and successful delivery of the instrumentation for the transponder module of the Tellabs 7100. These 10 systems were a SQL Server integrated, LabVIEW based executive and suite of tests utilizing $½ a million worth of commercial instrumentation each and data acquisition. The data was also managed by a set of Access based utilities.

• Trained & directed less senior engineers and technicians in the support of the manufacturing and test of the transponder to the component level.

• Contributed to the transponder product development.

• Collaborated with other Tellabs 7100 module development teams.

• Evaluated electro-optical components (Lasers, APD & PIN receivers wavelength lockers etc.) for compatibility with the Tellabs 7100 transponder.

# **1996 -2000 POLAROID CORPORATION Cambridge, Newton, Norwood, MA**

# A manufacturer of photographic and digital imaging products

# **Principal Engineer, Digital Camera Instrumentation**

# Responsible for the development and maintenance of the digital camera lines instrumentation.

• Applied digital camera science to the development of test equipment and processes in support of Manufacturing, Field Service, QA, PCB vendors and Product Development.

• Supported 45 test stations, such as functional PCB pogo testers, subassemblies, Shutter, CCD, Pretest, Collimation, Burn In, Calibration and Image Performance.

• Managed the Test Equipment department in terms of projections of project time and money, personnel supervision, and interdepartmental communications.

• Developed new test stations in support of new product.

# **1994 - 1996 ADVANCED TELEVISION TEST CENTER Alexandria, VA**

# Owned and chartered by ABC, NBC, CBS, PBS, NAB, EIA, MSTV, INTV and Cable Labs to test ATV/HDTV for eventual FCC acceptance.

# **Manager, Computer Systems Engineering**

# Responsible to the president for all computer, network and software systems.

• Developed test automation capability on 4 Ethernet networked Macs under LabVIEW for the HDTV test system. The system consists of one Mac to manage an RF Testbed (to replicate the impairments inherent in TV transmission), one to manage tape machines (D2s and HDD1000s on VLAN), one to manage the test database and one to manage operator and expert viewer interface.

• Managed an Appleshare, Star controller, 20 user, three printer administrative network. This included s/w upgrades troubleshooting, backups, wiring and financial justifications of improvements.

• Contributed to RF, video and audio; scientific and engineering projects in support of test procedure development, frequency allocation studies, and the RF testbed.

• Principal in testing, data reduction, analysis and presentation of HDTV in support of the ATSC specification development and NTSC Data Broadcast (NDBC) systems.

• Supervised junior employees efforts to prepare for, and successfully test ATV/HDTV systems.

• Developed sub-systems to the HDTV test system in Think C for the Mac.

# **1985 - INDEPENDENT CONSULTING Norton, MA, Alexandria, VA**

# **Intermittently to 1994 Fremont, CA, New Bern, NC**

• Automated temperature compensation for Ku & C-band satellite earth station radios using LabVIEW s/w on a Windows platform, the HP438a RF power meter, the HP8563 spectrum analyzer, the HP83752 RF signal generator and a Watlow 981 temperature chamber controller..

• Developed Windows 3.1 fax modem/printer device driver using the Microsoft Visual C++, SDK & DDK tool sets on my 486-66DX2 VESA PC.

• Implemented satellite ground station projects for various business, and news data clients (Reuters, Knight-Ridder, PC-Quotes, Investors Business Daily etc.).

• Developed human interface to TI545 PLC and industrial wastewater treatment plant using LabVIEW s/w. The system was an AppleTalk client/server with clients in multiple cities connected via DDS.

• Automated the Chatillon TSDC stress & strain measurement system for a medical device company.

• Supported the development of a national VSAT installation and maintenance

organization.

• Developed dBase3+-based VSAT business management package.

• Led development of management strategies and identified marketing opportunities for corporate clients for a VSAT service company.

1985 - 1992 MOTOROLA CODEX CORPORATION Canton, MA

A manufacturer of advanced data communications products.

Senior Engineer

Contributed to product diagnostics, generated applications benefits and provided pragmatic approach to product strategy and feature implementation.

• Automated the development time & Alpha test systems for the dial modem product line.

• Developed self-test embedded DSP diagnostics for telecommunications products.

• Contributed in the development of the V.FAST modem. (115.2kbps async dial)

• Initiated the dial network management product core technology

• Contributed general product management i.e.: FCC, UL, & foreign registration, TR30.3 standards, introduced dial network management, evaluated commercial s/w packages, managed OEM product lines & analyzed competitive products.

1977 - 1985 United Press International Hong Kong

A worldwide news wire and news photo service. San Francisco, CA

Boston, MA

Telecommunications Manager

Maintained data communications facilities in New England and New York. Achieved promotion to management of Pacific Division and, later, Asia/Australia Division.

• Converted 10 western states’ network from land line-teletype to VSAT and 3 meter Harris dish-computer.

• Converted Asia/Australia network to accommodate telephoto sale to Reuters.

• Managed staff and sub-contractors in support of 1200-plus clients and a $10M operation; provided new client sales support.

• Developed contract management package in dBase3+.

• Engineered network interface to TDMs, DDS, modems and stat muxes.

• Evaluated a Case Corporation message switch to replace leased facilities.

• Managed technical aspect of teletext service to cable TV subscribers nationally.

1973 - 1977 Analog Devices Inc. Norwood, MA

A manufacturer of operational amplifiers, digital panel meters, A/Ds, D/As, log amps, F/Vs, V/Fs, digital to syncro, and syncro to digital converters.

Senior Test Equipment Development Technician

Defined product test parameters. Developed, fabricated, and tested a full line of test equipment for the ADI Modular Instrument Division product line.

EDUCATION: Boston, MA

# Clark University “Advanced Enterprise & Web Development” Masters Certificate

# (VB6.0, VB.NET, Java, ADO, ADO.NET, SQL, SQL Server, ASP, ASP.NET, VB & Java Script, HTML, DHTML, XML, UML, & COM)

# M.S., Electrical Engineering, Boston University, Candidate

# B.S., Electrical Engineering Technology, *cum laude,* Northeastern University

# A.E., Computer Technology, Northeastern University

# A.E., Electronics, Northeastern University

# M.C.S.E. Training, Boston University

# National Instruments LabVIEW Basics 1, 2; Intermediate 1, 2; Advanced; Testand 1, 2.

# ViewLogic Training Certificates in Analog & Digital Design

# Xilinx Training Certificates in VHDL & FPGA Development environment

# **HOBBIES:** Extra class ham radio operator (KB1HTO).

# Collecting and refurbishing test equipment

# I built a 900MHz band repeater using converted commercial Motorola radios.