

**Skill sets :**

- **Visual Basic** - object-oriented, Internet-based and GUI programming (7 + years, 1995 to present)  
Visual Basic 3 – 6 , all phases and aspects of ‘complete product life cycle’  
Wide variety of objects, both standard and third party  
ASP, VBScript, Active-X, OCX, DLL, COM / DCOM, server automation, and stand-alone EXE builds  
OOP, TCP/IP, ODBC, coding to Winsock protocols ( Telnet, SMTP, NNTP, etc )
- **SQL Server ( 7 & 2K ), Access, MSDE, ODBC** - client / server, network integration programming ( 2 years +, )  
Database design and implementation, SQL-7 / 2K, Enterprise Manager, Query Analyzer, etc.  
E-Business, Web deployment & integration
- **Related keywords** – HTML, Front Page, MS Office, Access, NT4, NT2K, SQL7, SQL 2K, Crystal Reports
- **Other computers & programming** ( banking, transportation, and other apps ) (12 years, 1973 – 1985)  
RPG II, OCL  
IBM System 3 & System 34  
NCR 315-100
- **Project design, planning, and lead**  
See ‘Professional experience’ section below for some project examples.
- **Excellent communications, organizational, and teaching skills.**
- **Programming application areas of experience by industry :**
  - **Banking / accounting** ( 5 + years )
  - **General business & transportation industry** ( 8 + years )  
Standard in-house business applications such as payroll, full G/L, customer billing and tracking, fleet tracking and maintenance, etc, programming in RPG-II
  - **Convenience stores ( 600 store chain )** ( 1+ years )  
SQL DBA, legacy COBOL app integration to SQL / WEB server, E-commerce
- **HVAC/R , Controls & Automation** ( 14 + years, field mechanic / service tech / trouble shooter / programmer )  
Details upon request. 5 ‘Statewide’ Master licenses  
Wide variety of complex industrial and commercial ‘major equipment’ and controls.  
PLC’s, complex large scale multi-LAN-layer control systems, scientific & specialty equipment, etc.
- **Visual Basic 6.0 Certification from Brainbench - 01/15/2001**  
  
Scored higher than 86% of all previous takers of this test worldwide.  
Scored higher than all other previous takers of this test in the RDU, NC area.

	Total test-takers for this test	My Rank	My Percentile
Worldwide total	48,590	4,533	91 ( top 9 % )
RDU, NC area only	40	1	98 ( top 2 % )

- **Web site with sample programs, OCX’s, screen shots, etc :** <http://www.pmilligan.net>
- **Another of my websites :** <http://helpthecritters.com/> - offering free web design and hosting to animal help groups.
- **Favorite kind of assignment :**

‘The impossible’. I strongly prefer whenever possible to be given the projects that everyone else says are ‘impossible’. This does not include ‘impossible deadlines’, but rather those projects where others say ‘this simply can not be done, regardless of time frame or resources’.

## Professional experience

( 12 + years in computers & programming, 14 + years in HVAC/R and process control. )

**Swiftly Serve** - Programmer / Project Design / Business Analyst - 6 month contract, extended to 15 months 1/01 – 4/02

**Key tools :** Visual Basic, ASP, VBScript, SQL( 7 & 2K ), Windows NT 4.0 & 2K (client and server), IIS, PDI / RMS, ODBC, PCAnywhere, Crystal Reports, Front Page, multi-protocol, network software architecture, Web design / implementation

**Key functions :** Project planning, design, coding, 'complete project life cycle', management support and interaction, dynamic web & intranet deployment, user support, teaching, E-Business / E-commerce implementation

**In this Fortune 'Private 250' company,** I worked primarily with department heads and the executive level, as well as staff level of all departments, to invent, design, code, and implement computer application software and multi-tier network solutions, for internal use at the company headquarters as well as on the company LAN / WAN, which controls over 600 retail outlets. Major projects in this lead role included designing, coding, and implementing :

- **E-Commerce** – an application that controls the delivery of over 1,000,000 gallons of gasoline every day, directly interfacing the legacy COBOL system and SQL 2K to the fuel supplier via SMTP, FTP and TELNET, under VB, with full 'hands off' automation.
- **Cost reduction** – I discovered inefficiencies in the gasoline purchasing and control process, and wrote automated processes that allowed reduction of on-hand inventory by \$ 5,800,000 ( 70 % ), recoverable within a 90 day period.
- **Process improvement** – Devised, built, and implemented automation tools for identifying and escalating accounting problems in the flow of > 1,200,000 transactions / month through the legacy COBOL system in real-time to SQL and web & email based alarming & reporting. Reduced cash imbalance from ~ \$ 750,000 / month to ~ \$ 75,000 per month.
- **Process improvement** – Devised, built, and implemented toolsets, report sets, and company policies to improve store level compliance with daily computerized paperwork submission from historical daily ~ 70 %, to current daily ~ 99 % - ~ 100 %.
- **Windows-based multi-protocol** e-commerce tools and functions with multiple TCP protocols ( Telnet, FTP, SMTP ), typically with back-end server process and front-end server HTML / ASP Web deployment of reports, etc
- **Created corporate intranet web site**, including web integration with legacy Unix COBOL accounting system. At this time, ~ 800 daily business reports, charts, and graphs are presented via the website to ~ 500 daily users in 10 states, using a combination of VB, SQL, HTML, ASP, VBSCRIPT, etc.
- **Windows NT Server based automation** and interface tools for legacy Unix COBOL system, e-commerce, NT Server 4.0, NT Server 2000, web servers, application servers and database servers, etc
- **Integrated legacy UNIX-based COBOL system** with multiple TCP protocols ( Telnet, FTP, SMTP ) to create server-side automation and expansion of the legacy system under Windows NT.
- **Internal user support** and training as new applications were completed and brought online.

**Strategic Resource Solutions - Software Technologies Division** - Software Developer – VB 5 & 6 - 4/99 – 12/2000

**Key tools :** Visual Basic, COM / DCOM, Active-X, SQL-7, DAO, ODBC, IE 5, NT 4.0, IIS

**Key functions :** Project design, programming, project team leader

**I was pleased to return to the SRS company group** ( I was rehired by the same parent company as Diversified Control Systems, below ) in the Software Technologies Division to help create, design, and code new software products, and enhance existing software products. Product focus was in the HVAC controls, building controls, and facility management areas. **Strong emphasis on team environment, networked environment, multi-campus internet / intranet Web-based development and deployment. Visual Basic 5 & 6, N-tier client / server design, DAO, ADO, SQL, COM / DCOM, Active-X, LAN/WAN, TCP/IP, etc.** Team component building, entrepreneurial model, where, for example, my design of a new N-tier application might be built by myself, other teams in my department, and other contracted programmers world-wide, each working on various parts of the project ( database, services, business objects, U.I., etc )

**Applied Controls Technology** - Programmer - 5/98 - 3/99

Programming and commissioning building control systems for large 'Class A' industrial and commercial properties, using the Andover product line. I also wrote programs in VB 5 as needed to assist and enhance the efficiency and functionality of various departments, including creating engineering tools, programming aids and tools, etc. I was 'prime contact' for both customer and in-house technical support when I wasn't out of the office at a job site. 'Current project load' responsibility typically exceeded \$ 1,000,000. Individual projects reached as high as \$ 500,000 .

**Diversified Control Systems / Strategic Resource Solutions** 11/96 – 5/98 - DDC controls technician.

Siebe commercial / industrial systems. Control systems for large 'Class A' industrial and commercial properties, utilizing multiple layers of distributed processors, multiple LANs, etc. My duties included TAB, commissioning, diagnosis and repair of these systems and related equipment. I typically carried from \$50,000 to \$200,000 worth of controls jobs at any given time as 'prime tech', with complete responsibility for all aspects from initial 'rough' start-up to final customer inspection and warranty commencement.

**Carrier – contract project** 6/96 - 11/96 - contract programmer for Carrier .

I co-authored the only psychrometric program sold by Carrier, 'Psych +', an engineering and training tool for HVAC design combining CBT and printed training materials ( Visual Basic 3 ).

**Goodwin Refrigeration** 2410 Reliance Ave Apex NC 919-387-5797

Service technician - 2/93 - 6/96

HVAC, Commercial refrigeration, scientific specialty environmental and test chambers

**Johnson Controls Inc.** 3691 Trust Dr. Raleigh NC (Systems Service Division) 919-876-2301

Service Specialist 8/90 - 1/93

Commercial service technician. Complete account responsibility for a wide variety of equipment, including all types, brands, and sizes of HVAC equipment. This included both central and distributed systems, hot air, reciprocating chillers, VAV, oil, gas, heat pumps, etc.

**Modern Heating & Cooling** Dutchess Turnpike Poughkeepsie, NY

Service technician - 5/85 - 7/90

I was the only service technician here for 5 years, working 60 to 70 hours per week average to keep up with the work load. This was a varied mix of commercial HVAC and refrigeration. I left to move to North Carolina.

### **Prior to 1985**

Starting in 1973, when I graduated from High School, until 1985 when I entered the HVAC field, I worked as a computer operator, programmer and systems analyst. I worked for a tri-state AVIS franchise based in Poughkeepsie NY for 5 years as Data Processing Manager / System Analyst, programming in RPG II, and for AstraDyne ( 4 years ), a banking consortium of 12 banks (as mainframe operator), for over 4 years, and a couple of other places for shorter times. After all these years, I don't have accurate records from this period.

My work during this period ranged from computer operator ( raised floor mainframes, such as IBM 360, NCR 315-100, IBM System 3, IBM System 34, etc ) to programmer ( mainly RPG-II, with some BASIC, assembler, and FORTRAN ), to Systems Analyst and Data Processing Manager.

**Other programming activities:** My recent programming in Visual Basic has included GUI, client / server, Access database, SQL, and Internet techniques ( Winsock, TCP/IP, SMTP, Telnet, etc ). Please see my web site ( the URL is listed above ) for more information, and samples that can be downloaded. I began programming in 1973, in Basic. I have programmed extensively in Visual Basic ( 3 – 6 ), BASIC, and RPG-II, as well as minor efforts in various other languages (assembler, FORTRAN, etc ).

I am the originator and co-author of the only psychrometric program sold by the Carrier Corporation ( Psych+, Carrier part # 794-120 ). This program contains over 17,000 lines of source code. The 'freeware' version ( PMTHERM ) is in use by over 15,000 users in over two dozen countries. Available on the Internet at my web site, also available at [http://ftp.mecheng.asme.org/database/WIN\\_ENG/MASTER.HTML](http://ftp.mecheng.asme.org/database/WIN_ENG/MASTER.HTML) as distributed by ASME, The American Society of Mechanical Engineers, and many other sources.

I was an originator ( in 1995 ) of the only HVAC newsgroups on the Internet, Sci.Engr.Heat-Vent-AC and Alt.HVAC. I have worked on a wide variety of HVAC/R systems and computerized, networked building controls, and many types of 'specialty' lab test equipment ( test chambers, etc ). Details on request.

### **Additional areas of personal interest :**

- Psychrometrics ( programming, HVAC system design )
- Stock market ( programming, investing )
- Music ( playing keyboards, composing, recording )
- Internet ( newsgroup moderator since 1995, building web sites, client / server development, etc )

### **Licenses and Certifications :**

I have held the following N.C. licenses, as the result of a total of 30 hours of supervised examination:

- Master Electrician - ( Unlimited class, qualified individual )
- Refrigeration
- North Carolina S.B.I. security systems clearance
- H1 - ( Hot water ) • H2 - ( A/C ) • H3 - ( Hot air )
- CFC Certification - Universal ( types 2, 3, 4 & Automotive )

### **Other :**

While hard to quantify, I have **good organizational, communications, and teaching skills**. My real strong point, over and above the technical qualifications listed, is the ability to analyze and resolve problems. I enjoy working on the 'problem' cases, the ones where people say 'this has never been right, and no one knows why'. I enjoy finding creative and effective solutions to problems.

I have been told repeatedly that I have excellent communication skills. **My entire working career has involved working directly with end users and customers at all levels** ( internal and external, management and non-management, skilled and unskilled, etc ), and I feel that my ability to communicate effectively with people on all levels has served me well. I enjoy the interaction, and I feel that it helps me to be able to better understand the users of my work product.

**Personal career related activities :**

These are some of the career related activities I have pursued on my own time, and with my own funds ( as needed ) :

- 5/25/95 - **Originated the two HVAC Internet newsgroups**, Alt.HVAC and Sci.Engr.Heat-Vent-AC.
- 7/22/96 - **Program reviewed in The HVAC News** - PMTHERM ( VB program, over 15,000 users world wide )
- 8/96 - **Presentation** of PMTHERM to ASHRAE T.C. 1.1 ( Psychrometrics ) for peer review - Atlanta, GA
- 4/21/97 - **Guest speaker**, RSES chapter meeting, Raleigh, NC - 'Computer-aided Psychrometrics'
- 6/2/97 - **Guest speaker**, ARI seminar, Chicago, IL - 'The Internet and the HVAC industry'
- 6/29/97 - **Guest speaker**, ASHRAE Annual Meeting, Boston, MA - ' Latest Advances in Psychrometric Analysis'.
- 7/97 - **Author** - Carrier's psychrometric program PSYCH+ (Carrier part # 794-120 )
- 6/98 - **Author** - 'MultiPrn' - Microsoft distributes a Visio Technical add-in program I wrote
- 8/00 - **Author** - StockMon - a database and Internet based program for tracking portfolios and researching stocks.
- 1/01 - **BrainBench certification** in Visual Basic 6

**References :**

**( supervisors and managers )**

**Richard Khor** - Program Manager, SRS (919) 661-5000  
**Kevin Liner** - General Manager, Applied Controls 919-467-0106  
**Tom Knox** - President, Diversified Controls / VP SRS 919-941-1991  
**Ralph Everett** - Supervisor, Diversified Controls 919-217-8990

**( co-workers )**

**Troy Stewart** - Engineer, Diversified Controls and JCI - 876-2613  
**Gene Schultz** - programmer, SRS (919) 661-5000  
**Mark Shak** - Senior I.S. administrator, SRS (919) 661-5000  
**Ron Walters** - service tech , co-worker 919-544-7517

**( customers, personal )**

**Chris Scalzi** - Public school teacher, friend 15+ years 1-518-434-2799  
**Dr. Carl Carroll** - NCSU, Gardner Hall, Plant Pathology, customer  
**Dr. David Davies** - EPA environmental researcher 541-4700, customer

**( other references )**

- Andy Schoen - Sporlan Valve** Andy is the Senior Design Engineer for Sporlan Valve, and the co-author of PMTHERM. ( 314 ) 239-1111  
email = aschoen@MO.NET
- Will Wyman - Carrier Corp.** Will is an author and senior instructor for Carrier in Syracuse. He was my technical contact for the programming I did for Carrier. ( 607 ) 753-0653 ( no email address )
- Lew Harriman - Mason-Grant Co.** Lew is a PE specializing in desiccant systems. He is on the ASHRAE Technical Committee for desiccants, and is the author of an ASHRAE handbook on the subject, and a listed contributor to the ASHRAE Handbook of Fundamentals, as well as several other publications. (603) 431-0635 email = LewHarriman@MasonGrant.com
- Ron Nelson - Ph. D., PE, Professor, Dept. of Mech Eng, Iowa State University.** Ron is the Chairman of ASHRAE T.C. 1.1, Psychrometrics. ( 515 ) 294-6886 email = ronni@iastate.edu
- John Nash - Manager of Communications - ARI (Air Conditioning & Refrigeration Institute).** John ran the ARI Seminar in Chicago. 703-524-8800 email = jnash@dgs.dgsys.com
- Dom LaVigne - Internet Administrator - ARI (Air Conditioning & Refrigeration Institute).** I have known Dom for several years, regarding Internet and HVAC-related activities. 703-524-8800 email = dom@DGS.dgsys.com