

David A. Ferguson

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SUMMARY

Over 20 years experience in applied software development and system integration. Demonstrated ability in adapting a variety of computer systems and programming languages to design systems for a multitude of diverse processes and industries. Earned reputation for providing zero-defect programming.

WORK EXPERIENCE

- 9/05 - Present **Excell Data Corporation**, Bellevue, Washington
SDE4 - Contractor
On contract to Microsoft Corporation in Redmond. Working on the next generation of Exchange Server.
- 4/05 – 9/05 **Excell Data Corporation**, Bellevue, Washington
SDE4 - Contractor
On contract to Microsoft Corporation in Redmond. Came onboard to assist in final push to complete the Whidbey release of Visual Studio.NET. Worked on the debugger product, fixing code defect bugs and check in tests. Made significant contributions to a large C++/COM/C#, multithreaded code base.
- 2/03 – 4/05 **Automated Publishing Solutions, Inc.**, Pensacola FL
President & Chief Software Architect
Founded Automated Publishing Solutions, Inc. (www.apsolut.net) with two partners to pursue software development and system integration business in the Newspaper industry. Developed the premier packaging center control system and user interface. Sold and completed major projects for the San Francisco Chronicle (Union City Production Facility). Conceived and developed real-time industrial machine control software in C++. Created high speed tag based communication solution. Designed and developed state of the art C# components for user interface. Built and maintained web server for business. Designed and developed database schema for capturing newspaper business data (Open Control Interface, OCI).
- 10/90 - 1/03 **GE Automation Services**, Pensacola FL
Principle Engineer
Created and grew new industry line of business in publishing. Prepared proposals and bid specifications. Wrote job specifications and scope. Managed/developed customer contacts and contracts. Managed engineering teams. Developed networked client/server applications using Oracle, VB, and C. Designed complete database schemas. Authored custom Win16 and Win32 interface software. Designed overall system architecture and networks. Integrated third party systems. Developed PLC diagnostics and alarm programming. Developed automatic PLC code generation techniques. Developed software to automatically generate CADEWS configuration drawings. Developed continuous emissions monitoring system. Programmed PLC and Bailey control systems. Developed Windows based operator interfaces. Developed programming standards. Developed logic and SAMA diagrams.
- 2/89 - 9/90 **Industrial Power Systems**, Jacksonville FL
Electrical Engineer
Designed industrial control panels with emphasis on programmable controllers. Supervised panel construction. Tested and inspected panels. Performed field start-up and service. Wide project range from small panels to large PLC consoles.
- 5/86 - 2/89 **Patterson Enterprises**, Jacksonville FL
Controls Manager
Designed industrial refrigeration process controls and instrumentation. Designed industrial power distribution systems. Supervised control panel construction.
- 1/83 - 9/84 **Eglin Air Force Base (AD/ENE)**, Valparaiso FL
Electronics Engineer, Grade 5, Step 4
Participated in cooperative education program. Held secret security clearance.

APPLIED I have successfully applied and have a strong background in the following technologies:
COMPUTER C++, C#, C, Win 16/32, Real Time Linux, PC/104, VB, SQL Server, Oracle Server, PL/SQL,
EXPERIENCE Ladder Logic, Allen-Bradley PLC, Bailey Infi-90, QNX, AIX

PROCESS Newspaper Mail Room, Pulp and Paper, Refrigeration, Food and Pharmaceuticals, Waste Treatment,
EXPERIENCE Emissions Monitoring, Power Distribution.

EDUCATION Bachelor of Science in Electrical Engineering, University of Florida, Gainesville FL, May 1986.
Specialization in digital electronics, computer design, architecture, and controls.

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Project List

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Sept 2003 Developed the premier packaging center control system and user interface for the San Francisco
Feb 2005 Chronicle, Union City Production Facility.

The first phase of The San Francisco Chronicle project included the initial workcell and supervisory OCI database. The workcell consists of a Heidelberg NP 632, 30-head dual delivery inserter, a Schur palletizer and conveyors, three bundling lanes each having a Quipp 501 stacker and two Signode strappers.

The supervisory system consists of the Burt planning software and the Open Control Interface (OCI) database schema. The OCI is running on SQL Server in a DELL rack mounted server with hot swap hardware RAID 1.

The Workcell is composed of two computers, the workcell controller and the workcell interface. The controller is an industrial PC/104 computer with two high speed Opto22 PAMUX interface cards and a high speed incremental encoder input. It is responsible for the machine control. The controller is running a customized real time Linux kernel. The high speed device drivers and control software are written in C++.

The interface computer is a DELL rack mounted PC with hot swap hardware RAID 1. The interface computer runs several custom applications written in C# on v1.1 of the .NET runtime. These applications manage the interface between the controller, operators, the OCI database and other networked devices. A custom high speed tag based interface to the controller was created in C++ to allow efficient interfaces to be written. Several custom C# components with design time support were created to make developing interface applications quick. Developed page preview application in ASP.NET to display PDFs of ongoing newspaper production pages.

April 2003 Developed Packaging Integration Database (PID) schema for use at the Mobile Register. This SQL
May 2003 Sever database is a normalized view of the entire production process from sales to manufacturing and distribution. It captures the entire production workflow in a unified schema.

Sept 2000 Supervising Technical Engineer for the controls system installation at the Omaha World Herald's new
Jan 2003 Freedom Center. This project includes four inserters, two run of press (ROP) lines and integration with all other equipment vendors (gripper line, cart loader, material handling). Developed database schema in Microsoft SQL7 to support the entire production facility. Generated system specifications and architecture drawings for equipment vendors. Supervised the VB based HMI.

Aug 2000 Lead engineer for Orlando Sentinel Communications controls upgrade. Three inserters were upgraded
Jan 2003 to a new SLC-5/05 and PC based system. Developed the Open Control Interface (OCI) interface program in VB. This application combines Microsoft SQL7 stored procedures and client VB code to implement a robust and distributed execution system. Developed HTML based run time reports. These reports display live production data. Supervised the VB based HMI. Assisted in start up.

July 2000 Supervising Technical Engineer for the Arizona Republic controls upgrade. This project includes
Jan 2003 multiple inserters in multiple facilities. All of the mailroom production is coordinated by a single Microsoft SQL7 database. Supervised the VB based HMI. Assisted in start up.

May 2000 Supervising Technical Engineer for the Dallas Morning News controls upgrade. All of the inserters are
Jan 2003 being upgraded to a new SLC-5/05 and PC based system. Developed database schema in Microsoft SQL7 to support the inserter production. Began the Open Control Interface (OCI) specification development in conjunction with BURT Technologies. Supervised the VB based HMI.

Jan 2001 May 2001	<p>Supervising Technical Engineer for the Chicago Tribune collator installation project. Partnered with equipment vendor Prim Hall to provide all controls and controls engineering for the installation of three new collating lines. Developing database schema in Oracle to support the new collating lines. Programming message based sockets interface in C++ to interface to existing legacy mailroom systems. The new collators utilize central PC based controllers and distributed section nodes. Supervised the development of the Microsoft Visual Basic (VB) based Human Machine Interface (HMI).</p>
Jan 1996 Nov 2000	<p>Developed real-time control system, and information management system for The Washington Post in Springfield Virginia. The completed system tracks every bundle of newspapers from the moment of production up to storage within the Stock Master system. The legacy control system of proprietary PDP-11 computers was upgraded to Allen-Bradley PLC-5/60s and slave SLC-5/04s. Each production cell was equipped with an NT 4.0 workstation running WonderWare InTouch and custom interface software. Each workcell communicates to the Oracle 7.3 database, running on an RS-6000/AIX server. A Visual Basic client provides access to the Oracle data for supervisory and management task. All devices are attached to the Ethernet TCP/IP network.</p> <p>Developed the initial proposal, pricing and closed order. Prepared schedules and project status reports. Supervised the design and installation of ten PLC-5/60 control panels and over sixty SLC-5/04s. Supervised the software development team. Developed PLC code for real time machine control. Developed leading edge algorithms for reading paper thickness at high speeds. Developed several custom C++ applications to interface between the cell controller and: the barcode label applicators, the barcode scanners, a series of Marquees. Developed a fault tolerant store-n-forward agent to push data up to the Oracle server. Programmed the Oracle 7.3 database schema, packages and triggers. Supervised the development of the Visual Basic client.</p>
Aug 1995 Oct 1995	<p>Upgraded existing 'C' program from Windows 3.11 to Windows NT and C++ for FMC. The custom application provides data connectivity between the WonderWare InTouch application and the State of Florida quality system.</p>
April 1995 July 1995	<p>Developed the Mill-Wide Information Technology System (ITS) plan for the Weyerhaeuser, Plymouth, NC facility. The ITS plan was developed as a part of the overall Mill-wide study. The system makes all production data available on the high speed Mill-Wide Fiber-Optic Distributed Data Interface (FDDI) network.</p>
July 1993 April 1995	<p>Constructed all PLC code for four PLCs to control the NC-4 Fine paper Machine and Stock Preparation at Weyerhaeuser, Plymouth, NC. All digital and critical high speed analog loops are controlled with Allen-Bradley PLC-5/60s. All other analog loops and the operator interface are handled with the Bailey Infi-90 system.</p> <p>The project involved: designing the overall system architecture, developing programming standards, developing Logic and SAMA diagrams, integrating other third party systems, advanced diagnostics and alarm programming in the PLC, high quality code with detailed per rung comments, and automatic PLC code generation techniques.</p> <p>Worked on the design and configuration of the Bailey Infi-90 Distributed Control System. The system includes two new loops, 13 new module pairs (MFP02/MFP03), A global database manager, OIS-42 Master/Slave consoles and a fault tolerant Ethernet communication architecture.</p>
Sept 1993	<p>Programmed PLC-5/60 ladder logic to control sixty-two port punchers on the secondary air supply of the No. 5 Recovery Boiler at Weyerhaeuser, Plymouth, NC. These port punchers included independent variable damper position control and an operator interface via one PanelView in the Control Room and single-line RediPanels on the field enclosures.</p>
Feb 1993 May 1993	<p>Developed a software package to automatically generate Bailey CADEWS configuration drawings from a point tag database. The software package consists of two programs with over 20,000 lines of custom 'C' code and one dBASE III program.</p>

Nov 1992 Feb 1993	Revised an existing PLC-5 program for Mississippi Power Company, Gulfport, MS. Added ladder logic to the existing IWT program to control the two new permeate pumps and monitor the analog inputs on permeate flow, conductivity and concentrate flow. Revised the existing Advisor-PC graphics.
Oct 1992 Nov 1992	Developed program for Allen-Bradley PLC-5/60, to control soot blowing system for a recovery boiler at Weyerhaeuser Paper Company. The program was an upgrade to an existing PLC-2/30 system. The upgrade included updating the existing Advisor PC graphical operator interface. The upgrade was installed with zero defects and no down time.
Feb 1992 Oct 1992	Developed Continuous Emissions Monitoring System (CEMS) for installation at Boise Cascade. The system monitored and reported on the NOX emissions from a gas fired package boiler. The CEMS consisted of a custom developed data storage and reporting software package (10,000 lines of 'C' code) and an integrated CAMILE data acquisition package. The system features Print-N-Mail reports meeting all Federal, State and local requirements.
Oct 1990 Feb 1992	Single-handedly programmed a proprietary PLC to PC diagnostic software package for high speed paper machine diagnostics at the Champion Bucksport Mill. The system was developed using the QNX operating system and the "Open Look" windows package, and written in the 'C' language. The system involved networked work stations and printers, extensive message handling, automatic AutoCAD access for plotting and custom PLC drivers.
