

## Arizona Claude Edwards



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### Skills

Skill	YoE	Engagement	Rating	Description/Keywords
Classic C++	10+		★★★★★	ATL, MFC, also: FCL, C++/CLI, OWL. etc.
Modern C++	3		★★★☆☆	STL, AIX, Solaris, Linux
C#/DotNet	8		★★★★☆	Windows Forms, DLLs, Interop, Web ASP.NET
Python	2*		★★★★☆	PEP-008, multiprocessing, .NET and C++ Interop
JavaScript	2*		★★★★☆	Web, Bloomberg Terminal, Node, Typescript.
Java/Kotlin	5		★★★★☆	Enterprise Java, Android, JNI, Web-Applets, Tomcat
Windows	10+		★★★★★	Since 3.0, Internals, SDK, GDI/+, COM/+
Web	5+		★★★☆☆	ASP.Net, HTML, JavaScript, CSS, Frameworks
Unix	3		★★★☆☆	AIX, Solaris, Linux; Darwin (MacOS), Bloomberg
Cloud	5		★★☆☆☆	AWS, DynamoDB, SQS, S3, Elasticsearch, Serverless
Databases	10+		★★★★★	Design, DDL, Data Tier, SQL, NoSQL, Desktop
TCP/IP	3		★★★★☆	SSH, SSL/TLS; WS_FTP - fastest FTP client at the time
IPTV	5		★★★☆☆	ASP.Net MRML to set-top-box, VHO integration.

While I do not claim to maintain focused expertise in all the above simultaneously, I have a strong inventory of current and refreshable skills and solution finding experience. The table above is my attempt to estimate and depict for each skill my:

◇ **accumulated experience;** ◇ **engagement over time;** ◇ **overall self rating.**

I look forward to the opportunity to demonstrate my skills, and contribute positively to your organization.

### Aspects

Multi-Sector	Experience in Financial, Healthcare, Education, Defense, Internet, TV, and other industries.
Travel/Consulting	Traveling for trade shows, client meetings, collaboration, and recruiting.
User Experience	UX/UI designing, building, testing including for limited input devices such as phones and TVs.
Multimedia	Programming, encoding, decoding, and delivering image, video, and music formats.
Algorithms	Efficiently identifying and applying the appropriate algorithms and data structures.
Team Lead	Experience and recognition as team lead, principal developer, guide, and mentor.
low level coding	Coding at the bit level, endianness, protocols, layouts, MIL-STD-1553, Arduino, etc.

### Education

BSc in Computer Science with Math Minor  
Georgia State University

### References

[linkedin.com/in/arizona-edwards#recommendations](https://www.linkedin.com/in/arizona-edwards#recommendations)

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## Work Experience Summary

<b>Amazon</b>	Software Development Engineer II	Dec 2016 to Feb 2023
Developed cloud-based, large-scale financial microservices in Java, Kotlin, and AWS.		
<b>Bloomberg</b>	Senior Software Engineer	Jun 2013 to Jun 2016
Developed enterprise data delivery solutions concerning fixed income securities in C++, Python, SQL, etc.		
<b>Georgia Tech Research Institute</b>	Contract Programmer	Apr 2012 to May 2013
Developed software to test aircraft missile defense systems using MILSTD1553 in C++, C# and Python.		
<b>Alcatel-Lucent</b>	Solution Line Manager	May 2009 to Mar 2012
Implemented software solutions for IPTV television and telephone service providers using C#, SQL, Java, etc.		
<b>AT&amp;T</b>	Contract Programmer	Jan 2007 to Dec 2008
Developed interactive IPTV software for the U-Verse platform in C#, JavaScript, and SQL.		
<b>Agile Technologies LLC</b>	Contract Programmer	Jan 2006 to Mar 2006
Developed an Active-X control for Greyhound PackageXpress in C++		
<b>NextGen Healthcare Information Systems</b>	Consultant	Jan 2005 to Aug 2006
Implemented regulatory and migration solutions for healthcare providers in C#, SQL, Excel, etc.		
<b>taxslayer.com</b>	Senior Developer	Sep 2003 to Nov 2004
Developed online tax filing software in VB.Net, C# and SQL and using MSMQ.		
<b>Ipswitch</b>	Principal Software Developer	Mar 1999 to Sep 2003
Developed versions of WS_FTP and other retail Internet software in C++.		
<b>Asymetrix</b>	Contract Programmer	Jan 1997 to Feb 1999
Implemented online eLearning solutions for enterprises in ToolBook OpenScript, C++, etc.		
<b>Delta Airlines</b>	Senior Contract Programmer	Jan 1996 to Nov 1996
Developed airline reservations system software in C++.		
<b>The Federal Reserve Bank</b>	Contract Programmer	May 1994 to Dec 1995
Developed internal accounting and management software in C++ and SQL.		
<b>Nova Information Systems</b>	Contract Programmer	Sep 1993 to May 1994
Developed ETL and analysis software for credit card transaction data in VB, C, and C++.		
<b>The Hypermedia and Visualization Lab</b>	Multimedia Technologist	Jul 1992 to Aug 1993
Developed Computer Based Training and kiosk systems, maintained multimedia technology in the lab.		
<b>The Georgia Assessment Project</b>	Solution Generalist	Jul 1989 to Aug 1992
Produced standardized tests for the state of Georgia.		

## Work Experience Details

<b>Amazon</b> Dec 2016 to Feb 2023 Software Development Engineer II	<a href="http://amazon.com">http://amazon.com</a> 410 Terry Ave. North, Seattle, WA, 98109 USA: +1 (206) 266-1000
<b>Organization:</b> Teller Team, FinTech Organization, Finance Department. <b>Responsibilities:</b> Design, implement and support a very-large-scale financial cloud-based application. Conduct interviews, code assessment and other hiring activities. <b>Languages:</b> Java, Kotlin, JavaScript, others including Python, Perl, shell etc. <b>Methodologies:</b> Agile/Kanban Scrums <b>Source Control:</b> git <b>Platforms:</b> AWS, Enterprise Java, Web, IntelliJ IDEA	
<i>Amazon is a global technology, media, and retail company involved in a myriad of economic activities. Amazon operates at such a massive scale that ordinary business problems become computer science ones.</i>	
<p>I used Java, Kotlin, and several AWS technologies (DynamoDB, SQS, Elasticsearch, Lambda, etc.) to develop cloud based services that were part of a very large-scale invoice-processing and accounting application. I used infrastructure-as-code to architect and deploy the service with multi-zone redundancy and data security. I was responsible (primary service owner) for the Accounting service for a long time, partly due to my background in accounting. I delivered training sessions and wikis to the team and others on accounting concepts. I worked particularly closely with analysts and participated in workshops with other organizations to analyze their practices and translate their needs into software requirements.</p> <p>I contributed to hiring, being involved in over 200 hiring decisions including travel to hiring events, interviews, phone screens, manual code assessments, and assessor training.</p>	
<b>Bloomberg</b> Jun 2013 to Jun 2016 Senior Software Engineer	<a href="http://bloomberg.com">http://bloomberg.com</a> 731 Lexington Ave, New York, NY 10022 USA: +1 (212) 318-2000
<b>Organization:</b> BVAL Team, Data License Department, Enterprise Solutions. <b>Responsibilities:</b> Design, implement, and support enterprise data solutions regarding fixed income securities. <b>Languages:</b> C++, Python, SQL, Fortran, JavaScript, ksh, bash, Excel, Hypersheet, XML. <b>Methodologies:</b> Agile/SCRUM, Waterfall. <b>Source Control:</b> git, RCS, Bloomberg proprietary, Phabricator <b>Platforms:</b> AIX, Solaris, Linux, Bloomberg Terminal <b>Applications:</b> Exceed On Demand, Atlassian Confluence & Jira, Bloomberg proprietary	
<i>Bloomberg LP is an international financial information services and news gathering company. Data License is a \$750M/yr enterprise platform that delivers collated Bloomberg data to enterprise clients as files. The BVAL Team specializes in fixed-income securities and regulatory data within Data License.</i>	
<p>I designed, implemented, and supported enterprise data solutions regarding fixed income securities. I programmed mostly in and for the Unix command line environment, primarily in C++, SQL and Python, along with Fortran, JavaScript, shell languages and many Bloomberg proprietary technologies. I did user interface development, working on several screens in the Bloomberg Terminal, including customer facing screens. Senior Engineers at Bloomberg are expected to be or become competent in any language or technology necessary for all aspects of their projects. I was substantially involved in and responsible for database design and programming, feasibility and technical reviews, coding, all stages of testing, documentation, sign off if required for UX/security/compliance, phased rollout, configuration, and ultimately support. At times I was also in rotation as a support on-call, with the possibility of being somewhat always on-call in exigent circumstances, or if the scheduled on-call was not reachable.</p>	

<b>Georgia Tech Research Institute (GTRI)</b> Apr 2012 to May 2013 Contract Programmer	<a href="http://gtri.gatech.edu">http://gtri.gatech.edu</a> 400 10th St NW, Atlanta, GA 30318 USA: +1 (404) 894-7325
<b>Organization:</b> Electronic Systems Laboratory (ELSYS), <a href="http://www.gtri.gatech.edu/elsys">http://www.gtri.gatech.edu/elsys</a> <b>Responsibilities:</b> Develop and enhance software to simulate and test airborne-survivability missile-defense systems. Direct and mentor student interns. <b>Languages:</b> C++, C++/CLI (Managed C++), Python, C#, C <b>Source Control:</b> MKS Integrity (now PTC Integrity) <b>Platforms:</b> MFC, Arduino	
<i>Georgia Tech Research Institute (GTRI) is a leading research institute with international presence providing solutions for government and industry.</i>	
I was a key implementer of several successful electronic warfare projects primarily using C++ (regular and CLI), Python, and C#, the revenue for which was in the tens of millions of dollars. I directed and coached the two student interns on my project, and indirectly provided additional mentoring to other student interns. I conceived of and successfully implemented a small hardware project with integrated circuits (ICs) and electronic components.	

<b>Alcatel-Lucent</b> May 2009 to Mar 2012 Software Architect/Solution Line Manager	<a href="http://alcatel-lucent.com">http://alcatel-lucent.com</a> 800 North Pointe Pkwy, Alpharetta, GA 30005 USA: +1 (770) 750-2339
<b>Organization:</b> Multimedia Integration Division, IPTV Application Architecture <b>Responsibilities:</b> Design, prototype, develop, demo, certify, and deploy IPTV integration software and interactive multimedia software for Telcos and utility companies seeking to provide and enhance IPTV television and mobile services using Microsoft Mediaroom. <b>Languages:</b> C#, Mediaroom Markup Language (MRML), SQL, Java, others. <b>Source Control:</b> Subversion (SVN) <b>Platforms:</b> ASP.Net, Presentation Framework (PF), Android, SQL Server	
<i>Alcatel-Lucent is a global telecommunications corporation with a strong presence in the global IPTV (broadcast television based on IP technology) industry. Our customers included some of the largest IPTV broadcasters in the world including AT&amp;T, SingTel and Portugal Telecom.</i>	
I performed a broad range of software development activities including software architecture, visual design, coding, prototyping, technology evaluation, business development, demos, trade shows, training, acceptance testing, and deployment. I coded primarily in C# and Dot Net but also did web, JavaScript, Java, and database programming. I primarily developed code targeted at the television-connected, interactive set-top-box which the user controls via handheld remote. I also developed code for other targets in the integrated platform including IPTV back end servers in the VHO, web servers inside and outside the VHO, and Android. Products included Caller ID and Call Handling, Voicemail, Remote DVR, Mobile-RDVR, Instant Messaging, Weather, Fitness Instruction, Movie listings, Yellow Pages, Facebook, Pandora, Flickr, casual games and others.	

<b>AT&amp;T</b> Jan 2007 to Dec 2008 Contract Programmer	<a href="http://att.com">http://att.com</a> 725 W Peachtree St NW, Atlanta, GA 30308 USA: +1 (800) 331-0500
<b>Organization:</b> AT&T Labs, Video and Converged Services, Exploratory Application Development <b>Responsibilities:</b> Prototype and develop IPTV multimedia software for the U-Verse platform. <b>Languages:</b> C#, Mediaroom Markup Language (MRML), JavaScript, SQL, C++ <b>Source Control:</b> Subversion (SVN) <b>Platforms:</b> ASP.Net, Oracle, DirectShow	
<i>AT&amp;T, a Fortune 500 company with a strong history in communications and broadcasting, performed the first long-distance television transmission in 1927.</i>	
I developed and enhanced prototypes of on-screen, customer-facing, interactive IPTV applications that run directly on the Set-Top-Box. Technologies used include C#, ASP.NET, Oracle, SQL, JavaScript, C++, DirectShow, and the Windows Media SDKs.	

<b>Agile Technologies LLC</b> Jan 2006 to Mar 2006 Independent Contractor	<a href="http://www.agiletech.com">http://www.agiletech.com</a> 400 Perimeter Center Terrace Ste 145, Atlanta, GA 30346 USA: +1 (678) 579-9068
<b>Responsibilities:</b> Develop an Active-X control for Greyhound PackageXpress, for Greyhound Lines Inc. <b>Languages:</b> C++, JavaScript, HTML <b>Source Control:</b> Subversion <b>Platforms:</b> Windows 98, Visual Studio 6, IE6	
<i>Agile Technologies provided consulting and application development services to clients.</i>	
<p>Greyhound PackageXpress allows retail customers to ship packages via Greyhound bus lines. Agile developed a J2EE web application to allow ticket agents to accept packages and charge customers for shipment. The ticket agents used workstations attached to a luggage scale, a receipt printer, a regular printer, and a debit card PIN pad, along with other peripherals. My job was to write an Active-X control to allow the web application to communicate with the luggage scale via the parallel port and the debit PIN pad over the serial port.</p> <p>The project was an exercise in retrograde and unsupported environments; asynchronous serial and parallel port communications; multi-threaded, semi-persistent COM objects; HTML; and JavaScript.</p>	

<b>NextGen Healthcare Information Systems</b> Jan 2005 to Aug 2006 Consultant	<a href="http://nextgen.com">http://nextgen.com</a> 3340 Peachtree Road NE, Suite 2700, Atlanta, GA 30326 USA: +1 (404) 467-1500
<b>Organization:</b> NextGen Consulting Services <b>Responsibilities:</b> Design and develop custom solutions for healthcare industry clients, primarily in the areas of data migration and regulation compliance. Maintain HIPAA compliancy. <b>Languages:</b> C#, VB.Net, SQL, XML, HL7, Microsoft VBA, Excel, Access, others. <b>Source Control:</b> Visual Source Safe <b>Platforms:</b> SQL Server, MSMQ, Microsoft Office, Crystal Reports, Infragistics	
<i>NextGen is a Microsoft Gold Partner in the Healthcare industry that develops Electronic Medical Records (EMR) and Enterprise Practice Management (EPM) software for health providers and health agencies. NextGen Consulting Services provides customer specific solutions in data migration, report generation and workflow automation.</i>	
<p>I developed custom solutions to help several new customers convert their health care and accounting data from other software formats into NextGen formats. I wrote programs to generate various regulatory reports from customer databases. I programmed extensively in Excel using both macros and VBA, as well DotNet Interop for Microsoft Office using C# and VB.Net. I travelled to client sites to observe workflow, determine requirements, and demonstrate solutions.</p>	

<b>taxslayer.com (as Rhodes Financial Services)</b> Sep 2003 to Nov 2004 Senior Developer	<a href="http://taxslayer.com">http://taxslayer.com</a> 3003 TaxSlayer Drive, Evans, GA 30809 USA: +1 (706) 868-2333
<b>Organization:</b> Online Filing Website <b>Responsibilities:</b> Design and develop parts of the www.taxslayer.com website. Design and develop web and email interfaces and high-reliability workflows around interactions with the customer and with the IRS. Provide phone support to customers during tax season. <b>Languages:</b> VB.Net, SQL, C#, XML <b>Source Control:</b> Perforce <b>Platforms:</b> ASP.Net, SQL Server, MSMQ, Microsoft Exchange	
<i>TaxSlayer LLC is a multi-faceted family of corporations that sells several tax and financial products, in addition to being a retail tax preparer and operator of the popular online tax filing website, taxslayer.com.</i>	
<p>I worked primarily on parts of www.taxslayer.com, the company's online filing website using VB.NET, ASP.NET and SQL Server. I wrote code to dynamically generate the web forms required for each state from metadata about each state's tax forms. Dynamically generated controls that maintain ViewState, that respond to client side and post back events, that persist data according to schema and metadata, and that validate data both client side and server side required an in depth knowledge of the ASPX page lifecycle and post back data.</p> <p>I wrote auxiliary processes and services in C# using MSMQ, XML, and Exchange.</p> <p>I provided phone support to customers during tax season. In addition to researching software glitches and answering questions about operating the software, I learned the answers to more common tax questions on the job and had access to tax experts for more serious questions.</p>	

<b>Ipswitch</b> Mar 1999 to Sep 2003 Principal Software Developer	<a href="http://ipswitch.com">http://ipswitch.com</a> 83 Hartwell Ave, Lexington, MA 02421 USA: +1 (781) 676-5700
<i>Organization:</i> WS_FTP Development Team, Augusta GA Office. <i>Responsibilities:</i> Design and develop features and versions of WS_FTP and related software. Participate in the UI design and architecture of other products. <i>Languages:</i> C++ <i>Source Control:</i> Visual Source Safe <i>Platforms:</i> FTP, TCP/IP, SSH, TLS/SSL, PKI, COM, ATL, Windows	
<i>Ipswitch made and sold retail Internet software including file transfer software such as WS_FTP and network monitoring software such as What's Up Gold.</i>	
I worked on several versions of WS_FTP, the most sold FTP client in the world. In particular, I was responsible for and developed the FTP engine for version 7, which has remained mostly in place to date. WS_FTP included extensive work in sockets, TCP/IP, FTP, Windows, and C++.	

<b>Asymetrix</b> Jan 1997 to Feb 1999 Contract Programmer	<a href="http://www.asymetrix.com">http://www.asymetrix.com</a>
<i>Organization:</i> Online eLearning division, Southeast USA Region. <i>Responsibilities:</i> Develop computer based (CBT) and web based (WBT) training and testing applications, primarily using Asymetrix ToolBook, OpenScript, and supporting technologies. Travel to meet with clients and development partners. <i>Languages:</i> OpenScript, C++, C, Java, JavaScript <i>Source Control:</i> CVS <i>Platforms:</i> ToolBook, Active-X/OLE, Internet Explorer, NSAPI, Netscape, ATL/COM, Windows	
<i>Asymetrix specialized in eLearning and produced ToolBook, a scriptable authoring platform with hypermedia and multimedia capabilities, reminiscent of HyperCard. Asymetrix also provided consulting services, using ToolBook to produce training materials for customers.</i>	
Working with information architects and artists, I developed several training applications and websites using ToolBook, HTML, JavaScript, C/C++, Active-X, and Java. I coded projects for American Airlines, Union Camp, ADP, Bank of America, Fidelity Investments, Los Alamos National Labs (LANL), and others. Development contracts were under strict time and budget constraints. I travelled to and participated in design and strategy meetings.	

<b>Delta Airlines (as Transquest, Inc)</b> Jan 1996 to Nov 1996 Senior Contract Programmer/Team Lead	<a href="http://delta.com">http://delta.com</a> 1030 Delta Blvd, Dept 982, Atlanta, GA, 30354
<i>Organization:</i> Software Development Team for Magellan™ Reservations System <i>Responsibilities:</i> Design and develop parts of a new Windows based front end to Delta's reservations system - working name "Reservations of the Future" (ROF). Mentor and guide Delta employees including some that had been retrained in software development. <i>Languages:</i> C++, SQL <i>Source Control:</i> Visual Source Safe <i>Platforms:</i> Borland's Object Windows Library (OWL), Delta proprietary.	
<i>Transquest was a software development subsidiary of Delta Airlines.</i>	
I was a team lead on parts of Magellan™, a new Windows based front end to Delta's reservations system, written in C++ and SQL, and communicating via TPF.	



<b>The Federal Reserve Bank - Atlanta (FRB)</b> May 1994 to Dec 1995 Contract Programmer	<a href="https://frbatlanta.org">https://frbatlanta.org</a> 1000 Peachtree St NE, Atlanta, GA 30309 (since 2001) USA: +1 (404) 498-8500
<b>Organization:</b> IPAPS (Integrated Purchasing and Accounts Payable System) <b>Responsibilities:</b> Design and develop new applications and features. Enhance and improve existing applications. Gather requirements and train users. Develop reusable, low level, Windows UI elements (controls). <b>Languages:</b> C++, SQL, C <b>Source Control:</b> Visual Source Safe <b>Platforms:</b> MFC, Sybase, SQL Server, Windows	
<i>The Federal Reserve Bank (FRB/The Fed) is an instrumentality of the United States Federal Government that oversees the economy and banking system.</i>	
I engaged in a wide range of activities including user requirements gathering, design, user training, code maintenance, and new development in C++ and SQL. My primary project was on a large integrated accounting suite. In particular I was the key developer on the Inventory Management application and I developed many of the shared DLLs used by other parts of the suite. I received several internal commendations for excellent work.	
<b>Nova Information Systems (now Elavon)</b> Sep 1993 to May 1994 Contract Programmer	<a href="http://elavon.com">http://elavon.com</a> Two Concourse Parkway, Suite 800, Atlanta, GA 30328 USA: +1 (678) 731-5000
<b>Organization:</b> Software R&D <b>Responsibilities:</b> Parse, analyze, and store (ETL) credit card transaction data from various bank formats. Design and develop client-server applications for customer-service inquiries from merchants, and to detect merchant fraud. Negotiate design requirements and features with users and management. <b>Languages:</b> C++, VB, C <b>Platforms:</b> Windows, Paradox Engine	
<i>NOVA Information Systems (NOVA) was and still is one of the larger credit card processors in the US.</i>	
I designed and developed client-server applications for customer-service inquiries, and to detect merchant fraud. I was able to meet the very challenging expectation of having the parsed information loaded, indexed and ready for customer service inquiry within an hour of receiving a bulk data file. This would have been impossible without using non-traditional, low-level wizardry. I had regular meetings with customer service and fraud monitoring agents to negotiate requirements and features. I was able to use VB to rapidly generate the user interfaces, while I used C/C++ to access the forms and perform the business and data model logic.	
<b>The Hypermedia and Visualization Laboratory (HVL)</b> Jul 1992 to Aug 1993 Multimedia Technologist	<a href="http://hvl.cs.gsu.edu/hvl/">http://hvl.cs.gsu.edu/hvl/</a> Georgia State University, Atlanta, GA 30303 USA: +1 (404) 651-2245
<b>Organization:</b> Georgia State University, Department of Mathematics and Computer Science. <b>Responsibilities:</b> Develop Computer Based Training and kiosk systems for government and military clients. Install, evaluate, and maintain multimedia hardware and software in the lab. Create and perform demos, and mentor students. <b>Languages:</b> C, shell scripts, application scripting languages <b>Platforms:</b> AIX, Irix, Windows, Macintosh, Renderman, Autodesk; Multiple pre-web hypermedia authoring applications with hypertext/hyperlink and HyperCard like capabilities.	
<i>In addition to its contributions to the NSF educational repositories on computer graphics, and to the proceedings of ACM SIGGRAPH, The Hypermedia and Visualization Laboratory (HVL) at Georgia State University created educational and informational hypermedia solutions for external clients.</i>	
On projects for external clients, my responsibilities included coding, video and audio capture and conversion, and weaving together media, text and hyperlinks into the instructional narrative. I operated and maintained the lab hardware and software. I purchased, installed and tested new technology including sound and video capture cards, video recording devices, video authoring software, multimedia authoring software, input devices, memory and hard drives. We were an early adopter of Intel Indeo and used their hardware and encoders in our projects. I mentored students and provided project and technology demos to clients and visitors. I completed several other small programming projects for clients and for internal use of the HVL. I wrote several utilities to create and operate on bitmapped file formats.	

<b>The Georgia Assessment Project (The GAP)</b> Jul 1989 to Aug 1992 Solution Generalist/Student Assistant	Georgia State University, Atlanta, GA 30303 USA: +1 (404) 651-2245
<i>Organization:</i> <i>Responsibilities:</i>  <i>Languages:</i> <i>Platforms:</i>	Georgia State University Department of Education; Georgia Department of Education. Use technology to support the workflow of producing standardized tests for the state of Georgia. Perform document production, desktop publishing, network administration. Create software for statistical analysis, network and file system maintenance, file conversions, and workflow automation. Pascal, C, C++, Xerox OpenScript, DOS Batch files, A little Ada, application macros such as WordPerfect, Lotus 123 and Borland Quattro. Xerox 8010 (Xerox Star), XNS, Novell, Windows, Paradox.
<i>The Georgia Assessment Project was a test development organization affiliated with Georgia State University, the Georgia Department of Education, and ETS.</i>	
As a solution generalist, I used many platforms, applications and languages, but of note, I started on a Xerox 8010 (the original Xerox Star) forerunner to GUI systems such as Macintosh and Windows. 1989 - 1992 was a dynamic period and the work environment evolved through many changes in computing platforms, languages, and network technologies. In a document production role, I used publishing software to enter and format standardized tests including Teacher Certification Tests (TCT), Curriculum Based Assessment, and other tests for the State of Georgia. I was assistant Network Administrator for our Novell Network, and for a time the acting Network Administrator. I programmed in Pascal, C, C++, Paradox, batch files and application languages such as WordPerfect to support the test development, statistical, and administrative workflows.	