

## Charles L. Cartledge

---

### CONTACT INFORMATION

3381 Glen Eden Quay  
Virginia Beach, VA  
23452-6241

*Land line:* 757-498-1012  
*Cell:* 757-633-2581  
*E-mail:* resume@clc-ent.com

### OBJECTIVE

A position as a technical manager to lead a team of dedicated professionals to solve complex computer system problems requiring leading edge approaches and techniques

### MANAGEMENT EXPERIENCE

- Technical program manager for numerous sonar projects, managing teams of up to 11 hardware and software developers
- System operational specifications, hardware and software engineering, programmer scheduling, budgets and funding, personnel evaluations, hiring recommendations and terminations
- Customer liaison (US and foreign nationals), managing customer expectations and relationships
- Requirement elicitation and software trouble report and corrective action tracking
- Tracking of budgetary versus actual expenditures
- Reporting directly to the General Manager

### SYSTEM ENGINEERING EXPERIENCE

- Design, requirements analysis, documentation of next generation real-time Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR) system for the United States Coast Guard (USCG)
- System design, requirements analysis, development, testing, installation, training and support of distributed processing C4ISR systems for the United States Navy foreign Navies and Coast Guards using commercial off the shelf (COTS) equipment
- Development of multiprocessor system integrating Oracle databases, Java applications and Arena simulation environments
- Designed, configured and utilized Beowulf cluster to develop real-time sonar performance prediction capability
- Design and implementation of standardized non-blocking approach to inter-process communications in distributed processor C4ISR systems

### MODELING EXPERIENCE

- Design, implementation and validation of numerous time and event driven simulators to support development and testing of production Command and Control (C2), Navy Tactical Data System (NTDS) and sonar systems
- Modeling of distributed sonar system to determine feasibility of process consolidation to reduce board count within network bandwidth constraints and to develop graceful degradation approach.
- Design, implementation, and testing of an enhanced track smoother for use as interface between a sonar and a shipboard anti-submarine weapon system
- Development and testing of real-time interface between shipboard navigation system and automated vessel identification system
- Development of multiprocessor system integrating Oracle databases, Java applications and Arena simulation environments
- Researching and documenting interfaces between and amongst legacy USCG C4ISR systems

- Developed real-time simulators and parsers for data sources and sensors: TADIL-A, TADIL-B, Link-1, Link-11, Link-14, Link-16, Link-22, OTCIXS, C4ISR, gyrocompasses, NMEA-0182, GPS, DGPS, RDF, AIS, STEDS, CDS, ACDS, MK86, MK92.
- Java, C, C++ and C# used in construction of C4ISR simulators
- Selected C4ISR simulators validated by OEMs in order to support system development, testing and customer acceptance

PROGRAMMING  
EXPERIENCE

- C#; reverse engineering of CRC data fields and development of compatible interface modules to prototypes of the next-generation of Automatic Identification System (AIS) transponders
- Java, troubleshooting interface between state-machine application, Oracle databases and Arena based simulation processes
- Java, C++, C, Corba; design, implementation, testing of numerous networked based multi-threaded client-server systems using on different Linux distributions, Windows NT, HP-UX and other OS's
- Java, C++, C; design, implementation and validation of numerous time and event driven simulators to support development and testing of production Command and Control (C2), Navy Tactical Data System (NTDS) and sonar systems
- C++; implemented high reliability TCP communications subsystem
- C; design, implementation, and testing of an enhanced track smoother for use as interface between a sonar and a shipboard anti-submarine weapon system
- C; design and implementation of a "plug and play" non-blocking TCP LAN service between high data rate message producer and an unreliable data consumer
- Experienced and proficient in a wide range of languages and integrated development environments, including: C, C++, C#, .NET, Java, JavaScript, Perl, R, python, Arena simulation, various assemblers, various BASICs, bash, ksh, csh, DOS, emacs, JQR, RKward, eclipse, netBeans, visual studio team system (VSTS), CORBA, COBOL, FORTRAN, UML, X, Access, Oracle and others
- Experienced with a number of operating systems (OS's): UNIX, Linux, Solaris, MS-DOS and various versions of Windows
- Implemented and maintained RCS and Subversion version control systems

WORK HISTORY

- **Fulcrum IT** *Senior software engineer* **2011 — present**
- **ODU Research Foundation** *Doctoral Research Assistant* **2007 — present**
- **CLC Enterprises** *Independent computer consultant* **1982 — present**
- **Global Defense Technology & Systems**  
*Senior software engineer scientist* **2007 — 2010**
- **EDO Corporation**  
*Program manager, system engineer and system programmer* **1984 — 2007**
- **USN Reserves** *Retired officer* **1973 — 2004**
- **Delex Systems** *Computer analyst and system administrator* **1981 — 1984**
- **Atlantic Analysis Corporation** *Computer analyst* **1978 — 1981**
- **Planning Systems Inc.** *Computer analyst* **1977 — 1978**

## EDUCATION

### **Old Dominion University**, Norfolk, VA, USA

M.S., Computer Science, 2007

- Thesis Title: *Investigation into Real-Time Sonar Performance Prediction Using Beowulf Clustering*
- Adviser: *Professor Chester E. Grosch*
- Area of Study: *Real-time processing of data in a distributed processing environment*

### **Oregon Institute of Technology**, Klamath Falls, OR, USA

B.E.E.T, Electronic Engineering Technology, 1974

- Electronics specialization (emphasis on electro-magnetics and digital computers)
- Minor in computer programming and software development

### **University of Alaska**, Fairbanks, AK, USA

A.E.E.T, Electronic Engineering Technology, 1972

- Electronics troubleshooting and repair
- Minor in computer programming and mathematics

## PUBLICATIONS

- 2011: ODU Computer Science Technical Report; Norfolk, VA, USA: Title: Connectivity Damage to a Graph by the Removal of an Edge or a Vertex
- 2010: ACM Conference on Hypertext and Hypermedia; Toronto, Ontario, Canada: Analysis of Graphs for Digital Preservation Suitability
- 2009: Joint Conference on Digital Libraries; Austin, TX, USA: A Framework for Digital Object Self-Preservation
- 2009: Joint ACM and IEEE Conference on Digital Libraries; Austin, TX, USA: Unsupervised Creation of Small World Networks for Preservation of Digital Objects
- 2008: Joint ACM and IEEE Conference on Digital Libraries; Pittsburgh, PA, USA: Self-Arranging Preservation Networks
- 2007: Old Dominion University Masters Thesis: Investigation into Real-Time Sonar Performance Predictions Using Beowulf Clustering
- 2004: European Conference on Underwater Acoustics; Delft, Netherlands: Investigation into Real-Time Sonar Performance Predictions Using Beowulf Clustering
- 2004: Undersea Defence Technology; Nice, France: Investigation into Real-Time Sonar Performance Predictions Using Beowulf Clustering
- 2003: Undersea Defence Technology; Malmo, Sweden: Sonar Modeling and Performance Predictions Using Beowulf
- 2001: CompactPCI Systems; Industry Feature COTS – The Development of a ship-board LAN Access Unit: A case history

## COMMUNITY ACTIVITIES

- Member of the Sovereign Military Order of Jerusalem Priory of the Monitor and the Merrimac, Norfolk, VA (Knights Templar, a service organization)
- Past Member Board of Directors, VetsHouse Inc., Virginia Beach, VA
- Former Boy Scout Scoutmaster for Troop 481, Kings Grant Baptist Church, Virginia Beach, VA
- 1999 Member of Who's Who in Information Technology

## SECURITY CLEARANCE CITIZENSHIP

Current Department of Defense information available upon request

USA

PROFESSIONAL  
INTERESTS

Autonomic systems, real-time applications, distributed processing, long-term preservation of digital data

MISC. KEYWORDS  
AND TOPICS  
DESIGNED FOR  
SEARCH ENGINES

- Developed WireShark software modules to analyze graceful fail-over LAN and WAN protocols.
- Designed, developed, debugged multi-threaded applications in Java, C, C++ and other languages.
- Familiar with various software symbolic debuggers.
- Modeled, designed, implemented high performance computer clusters using Beowulf technology to support real-time signal processing.
- Implemented and maintained RCS and Subversion version control systems.
- A proven ability to work well independently or with teams of people.
- Analysis of distributed sonar system to identify single points of failure.
- Developed Perl based CGI scripts to present web pages based on harvested and scraped meta-data from independent databases.
- Development of system architecture, system design, IDS, system integration documents.
- Designed networks based on required capacity and latency requirements.
- Excellent oral and written communication skills.
- Experienced in the movement of distributed application components to meet bandwidth and CPU constraints.
- Extensive review of current and legacy software looking for refactoring opportunities.
- Detailed understanding of TCP and UDP LAN message protocols.
- Familiar with Digital Library meta-data used for document storage and retrieval (MARC, XML-MARC, Dublin Core, Buckets, Open Archive Initiative Protocol for Harvesting Meta-data).
- Java Swing and Java AWT used in construction of shipboard command and control simulator.
- JavaScript used to generate permuted keyword index of conference papers.
- Modeling of distributed sonar system to determine feasibility of process consolidation to reduce board count within network bandwidth constraints and to develop graceful degradation approach.
- Perl used to harvest Internet WWW pages.
- Routinely conducted informal and ad-hoc training for entry and mid-level software developers.
- Software development in a mentoring role.
- System installation, testing and training with US and foreign navies.
- Experienced and proficient in a wide range of languages and integrated development environments, including: C, C++, C#, .NET, Java, JavaScript, Perl, R, python, Arena simulation, various assemblers, various BASICs, bash, ksh, csh, DOS, emacs, JQR, RKward, eclipse, visual studio team system (VSTS), CORBA, COBOL, FORTRAN, UML, X, Access, Oracle and others.
- Experienced with a number of operating systems (OS's): UNIX, Linux, Solaris, MS-DOS and various versions of Windows.
- Reverse engineering of checksums and CRCs.
- Specification, design, development, test and training of hard and soft real-time systems.
- Specification, design, development, test and training of time step and event driven simulations.
- Executive Officer (XO), Operations Officer (OPS), Training Officer (TO) and staff officer at Fleet and Pentagon level commands.
- Developed system requirements specification (SRS), interface requirements specification (IRS), interface design document (IDD), interface control document (ICD) as part of software development life cycle (SDLC) process for various systems and projects.
- Developed real-time simulators and parsers for TADIL-A, TADIL-B, Link-1, Link-

11, Link-14, Link-16, Link-22, OTCIXS, C4ISR, gyrocompasses, NMEA-0182, GPS, DGPS, RDF, AIS, STEDS, CDS, ACDS, MK86, MK92.

- Researched and wrote Interface Design Documents (IDDs) and Interface Control Documents (ICDs) for the following equipment/systems: Aeronautical General Instrument (AGI) Electromagnetic Speed Log, Aeronautical General Instrument (AGI) meteorological (MET) system, Air Defense System Integrator (ADSI) Link-11 processor, AN/SPA-25G Indicator Group, AN/SPS-73 Surface Search Radar, AN/SSR-1 Fleet Broadcast System Receiver, AN/WLR-1H Countermeasures Receiving Set, AN/WRN-6 Satellite Signals Navigation Set (classified GPS), Furuno DFF1 Depth Sounder, Furuno FM8800S Digital Selective Calling (DSC), Furuno GP-37 Differential Global Positioning System (DGPS) receiver, Furuno PG-500 Fluxgate Compass, Ideal Electronic Security Koden model 538 Radio Direction Finder (RDF), Ideal Electronic Security Koden model 580 Radio Direction Finder (RDF), Ideal Electronic Security Koden model 581 Radio Direction Finder (RDF), Knudsen 320N Navigational Echosounder, L3 PROTEC-M Automatic Identification System (AIS) transceiver, L3 Ross Digital Selective Calling DSC-500 transceiver, Litton SRD-331 Doppler Speed Log, Northrop Grumman Sperry Marine NAVIPILOT 4000 Heading Control System, Northrop Grumman SRD 500 Dual Axis Doppler Speed Log, Raytheon PilotStar D Heading Control System, Raytheon V850 Depth Sounder, Reiker RDD21-30-E Inclinometer, Saab R4 Automatic Identification System (AIS) transceiver, Shipboard Infrared Visual Sensor System (SIRVSS), Sperry Mark 27 Mod 1 Gyrocompass, Sperry Mark 39 Mod 3(A) Inertial Navigation System, Tech-Comm TC-5025CICGA Radio Direction Finder (RDF), Teledyne Meridian Gyrocompass, Tomahawk Command and Control System(TC2S) Communications System (TCOMMS) Interface Processor (TCIP) V(14) Replacement (TVR-1), Trimble NT300D Differential Global Positioning System (DGPS) receiver.