

Resume of Louis Newstrom *updated July 2025*

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SUMMARY

I am a Software Engineer with a scientific background.

I increase the productivity of others, by giving them simple interfaces to powerful algorithms.
(Think of what a calculator does for people.)

Examples include:

- Suite for non-test engineers to write and perform software tests.
 - Applications for non-database developers to store, update, and search data.
 - Libraries for non-GUI developers to create GUI interfaces.
 - Libraries for non-mathematicians to do complex calculations.
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EDUCATION

- Master of Arts in Management and Leadership from Webster University
 - Delta Mu Delta (International Honor Society in Business Administration)
 - Bachelor of Science in Computer Science from Rollins College
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CLEARANCES

- I have been cleared for access to Secret, Top Secret, and SCI information.
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SKILLS AND TOOLS

<u>Project Management</u>	<u>Design</u>	<u>Development</u>
<ul style="list-style-type: none"> • Estimating • Scheduling • Project Tracking 	<ul style="list-style-type: none"> • Object Oriented Design • Databases • Libraries • Embedded Systems • Distributed Systems • SysML and UML 	<ul style="list-style-type: none"> • C++ • HTML • Matlab • Python • SQL

EXPERIENCE

Senior Staff Software Engineer for Cortina Solutions (Mar 2024 - present)
at AFTAC - Air Force Technical Applications Center
on the Cobra King program

- implemented mathematical algorithms in software
- designed, implemented, tested, and installed updates to complex scientific software
- developed the Repeatable Automated Test Suite
- used C++, C, MatLab, Perl, Python on an IBM AIX platform

Staff Software Engineer for Northrop Grumman (Aug 2016 - Dec 2023)
on the B-21 program

- developed complex algorithms
- documented much of the Operational Flight Program (OFP) with UML
- used C++, Python, and UML on a Linux platform
- used Amesim, Bamboo, Bitbucket, Cameo, Confluence, JIRA, Matlab, Rhapsody, VectorCAST

Software Engineer 5 for Electronic Arts (Mar 2015 - Jan 2016)

- investigated hacking events reported by Madden Ultimate Team customers
- automated detection of hacking activity within the Madden Ultimate Team game
- developed web tools to display forensic and historic logs for the Madden Ultimate Team game
- used LAMP stack (Linux, Apache, MySQL, PHP), Collaborator, JIRA, Perforce

Software Engineer 5 for Global Engineering Management and Support (Apr 2011 - Apr 2014)

- led quality control team for verification of software for running automated test systems
- wrote test software for embedded systems
- maintained MySQL and SQL Server databases
- developed pathfinding and routing information for automated test systems
- developed language translation algorithms to automate translation of obsolete language test code into Test Stand
- used C, C++, LabView CVI, Test Stand, Subversion on a Windows platform
- used LAMP stack (Linux, Apache, MySQL, PHP), JavaScript on a web browser platform

(Webster University)

Software Engineer 5 for Quantum Technology Sciences (Jan 2007 - May 2009)
on the National Data Center

at AFTAC - Air Force Technical Applications Center
supporting the Comprehensive Nuclear Test Ban Treaty

- managed 5 person team to automate detection of nuclear events
- designed library so non-database programmers can access Oracle database
- designed library so non-X Windows programmers can write X Windows GUIs
- developed digital signal processing tools
- used C, C++, and MatLab on Sun Solaris UNIX platform
- used ClearCase, ClearDDTS, Oracle Database, UML

Security Engineer for Science Applications International Corporation (Nov 2006 - Dec 2006)
on the Federal Enterprise Architecture

- updated security procedures for the National Archives to reflect changes in NIST standard

Senior Software Engineer for Northrop Grumman (Dec 2005 - Aug 2006)

on the JUCAS - Joint Unmanned Combat Air Systems project
on the Information Warfare IR&D project

- designed library so non-socket programmers can write communications software
- developed route algorithm for autonomous unmanned combat air vehicles
- developed methodology for information warfare attacks and defense
- used Visual C++ on Windows platform to write embedded code
- used Rational Rose

Security Engineer for SAIC - Science Applications International Corporation (Jul 2005 - Sep 2005)
on the Federal Enterprise Architecture

- wrote security procedures for the National Archives
- derived traceability matrices for requirements

- designed audit procedures for security audits

Senior Firmware Engineer for Bally Gaming (Jul 2004 - Feb 2005)
on the Alpha Game System

- maintained and updated a tamper resistant operating system
- developed secure communications protocols
- used C on Linux platform to write embedded code

Senior Software Engineer for Raytheon (Jan 2004 - Jun 2004)
on the Next Generation Destroyer program
on the Integrated Under Sea Warfare program

- designed library for database access
- developed database initialization routines
- ported task scheduler from Java to C++ to improve reliability and availability
- used C++, Java, and CORBA on a Sun Solaris UNIX platform to write embedded code
- used Oracle Database, UML

Senior Software Engineer for COBRO (Oct 2003 - Dec 2003)
on the Special Operations Aviation Maintenance Support System

- designed and developed databases
- automated import of data from Word and Excel documents into databases
- used Visual Basic on a Windows platform
- used Access Database, Excel, Word

Engineer Specialist Northrop Grumman (Nov 2001 - Sep 2003)
on the THAAD - Theater High Altitude Area Defense program
on the Medium Extended Air Defense System program

- developed battle monitor and control software
- developed databases for battle plan and situation display data
- developed access control to battle plan and situation display databases
- developed test simulators for distributed components
- used C++ on a Sun Solaris UNIX platform to write embedded code
- used Rational Rose

Senior Software Engineer for ImageLinks (May 2001 - Aug 2001)

- designed and developed image tiling algorithm for large mosaics
- designed and developed image manipulation algorithms
- used C++ on a Linux platform
- used WxWindows

Senior Technical Staff for DBA Systems / Titan (Aug 1997 - May 2001)
on the MIES - Modern Imagery Exploitation System program

- managed 3 person team to develop on-line training for Imagery Analysts
- wrote procedures that brought company to CMM level 2 and ISO-9000 certifications
- presented status to military customer
- designed CGI server for web pages
- designed web based access control of databases
- developed database for storage of large (>1Gb) satellite images
- ported C++ programs to Java
- used C++, Java, and CORBA on a Sun Solaris UNIX platform
- used Rational Rose, Sybase Database

Senior Software Engineer for Harris (Mar 1996 - Aug 1997)

- developed algorithms for trajectory interception and prediction

- designed and developed aircraft tracking software for an air traffic control system
- designed and developed network communications drivers
- used C++ on a Sun Solaris UNIX platform
- used ClearCase, Clear DDTs, CMM level 3, Rational Rose, TCP/IP sockets

Senior Software Engineer for Treadcon (Jul 1994 - Sep 1995)

- led team of 5 to create embedded real-time software for an industrial refrigeration control system
- designed and developed fax modem control algorithms
- designed GUI for embedded system
- used C on an embedded code

Software Engineer for Martin Marietta (Oct 1993 - Nov 1993)

- designed and developed report generators
- used FORTRAN, SQL
- used Oracle Database

Systems Analyst for Pan Am / Johnson Controls / Computer Sciences Raytheon (Nov 1987 - Jul 1993)

on the Launch Base Support project

- designed and developed generic menu-driven report generators
- designed and developed databases
- designed and developed network access to databases
- maintained over 100 PC's
- used Basic, C, Clipper, COBOL, DBase, SQL on Windows platform using a Novell network
- used Lotus 123, Oracle Database, WordStar

(Rollins College)

Programmer for Harris (Nov 1983 - Feb 1985)

on the Navy Extremely High Frequency Satellite Program

- developed satellite tracking software
- developed oceanic wave prediction and compensation software
- used FORTRAN on a UNIX platform
- used VisiCalc