

Karl A. Nyberg

- Summary** Senior software professional with over twenty five years industry wide lifecycle software experience (including SEI CMM Level 5) performing senior technical / supervisory projects. Strengths in analysis, automation and writing, communications protocols and server-side transaction processing systems on UNIX variants (Linux, Solaris, AIX).
- Education** Massachusetts Institute of Technology Cambridge, MA
- Master's in Electrical Engineering and Computer Science
 - Bachelor's in Computer Science and Engineering
 - ACM SIGAda Community Contributions Award, November, 2007
- Awards**
- Sun Micro "Open Performance Contest" SunFire T1000, January 2007
 - IEEE POSIX Pioneer Award, March 1988
 - ACM Senior Member, IEEE, ACM SIGAda (all current)
- Professional**
- US SC22 JTC1 TAG / ISO IETC J22 - Java Study Group (1997 - 1999)
 - Federal Advisory Board on Ada (1990 – 1992), Ada 9X (1989 – 1990)
 - Over 25 publications, presentations (see <http://karl.nyberg.net>)
- Capabilities**
- Applications: software standards – protocols (TCP/IP, SMTP, OFX, IFX, XML) and languages (Ada, Java). Design and implementation of transaction processing systems – banking, bill payment, computer security, formal methods, optical character recognition, communication and telecommunications billing and mediation systems, and image processing.
- Languages: Ada, BASIC, C/C++, DSD, Fortran, Java, CORBA / IDL.
- Operating Systems: UNIX variants; Windows desktop variants.
- Databases: SQL: MySQL, DB2, Oracle, MS SQL.
- Experience**
- 1985 – Present Grebyn Corporation Sterling, VA
- Projects: Single day to multi-year efforts covering the entire software development lifecycle; local, national and international. Authored, edited and published periodicals (technical and market) on Ada.
- Clients: Boeing, CSC, Global Protocols, Honeywell, IBM, IDA, IntelliData, JRL Assoc., LMCO, OIS, Openet, SAIC, SEI, SPC, TowerSource, VISA.
- 1983-1986 Verdix Corporation Chantilly, VA
- Senior Staff: authored SBIR proposals, mentored junior staff, system administration, software design and customer service / quality assurance.

Development Project Specific Programming Languages, Tools and Results

Company	Project	Platform	Functionality	Software	Documentation
Openet Telecom	Telecom billing and mediation	Sun Solaris, DSD, wiki, Oracle, Eclipse, cvs	Transaction process with billing and mediation records.	DSD scripting language	Installation, analysis and requirements.
Internal R&D	Digital Elevation Model (DEM) Generation	Linux / Solaris, GCC, Ada	Parse XML, HDF, create DEM from ASTER satellite data.	6,000 lines Ada	Publications (two done, third in process)
Waterford Consultants	RF Engineering	Windows XP, Power Basic, Fortran, GCC, C	AM Radio / Cell Tower Signal Interference	4,000 lines C / headers	Design and Operation (less than 10 pages)
Objective Interface Systems	Requirements Traceability of CORBA COTS	Linux, Ada, GCC, cvs, VeroStyle, Wiki	Tools for VeroTrace MS SQL database population	8,000 lines Ada	Hundreds of pages, semi-automated
Global Protocols	SCPS TCP/IP Proxy Accelerator	Linux, C, TCL, expect, GCC, cvs, doxygen, Wiki	Explicit Congestion Notification (ECN); performance	500 Lines C, 500 lines TCL	Dozens of web pages
TowerSource	Web-based Cell Tower Locator Service	Java, JavaScript, Linux, Apache, MySQL, tomcat, google maps API	Web site rehosting and minor modifications	500 lines Java, HTML and JavaScript	Operations manual (less than 10 pages)
Internal R&D	Constructive Approach to Integer Factorization	Linux, Solaris, Ada, GCC, multicore	Created a multicore approach to construct factors of large integers.	2,000 lines Ada	Professional publication and talk, web log, computer award
Lockheed Martin	En Route Automation Modernization (ERAM)	AIX, Ada, C++, OCS PowerAda, GCC, pvcs	Tools for language interoperability in C++ / Ada; Ada components	30,000 lines Ada; 5,000 lines C++	Various design documents. Professional publication
InteliData	InteliWorks Bill Payment	UNIX, C, Java, XML, GCC, shell	Automated Quality Assurance test tools	Lots of C and XML	Protocol manual (100+ pages)
ESCOM	Apache Load Module	UNIX, C, Apache	Load module for quarantine server	1,000 lines C	Negligible
	Trusted Minix	MINIX, C	Kernel Test Routines	Lots of C	Negligible
IBM	Financial Services	AIX, C, DB2, MQ Series, Netscape, WebSphere	Banking Simulator	Lots of C	Various Design Change Requests
Internal R&D	OCR / image analysis of PGP publications.	Linux, GCC, Ada	Image Processing, checksum calculations	Lots of Ada	DC ACM SIGAda talk and presentation
VISA Interactive / Integriion	Online Bill Payment and Banking	Solaris, C, Informix, awk, sed, grep, GCC	Support tools for third party application certification.	Lots of C, shell scripts	Protocol manual 250 pages, multiple editions
VAST Corporation	Boeing Reserve Component Automation System (RCAS)	SCO Secure UNIX, Verdex Ada	Compilation order tool; performance; identification of duplicate functionality	Reduced Code Footprint	Negligible
SAIC	OCR Power Server (OPS)	SunOS, C, GCC	Process control; data flow; voting logic; confidence markup	10,000 lines C / header	Design, theory of operation