
Harold Nicholas Nagel, Ph.D.

Information Systems Analyst, Architect and Engineer

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Professional Statement

Information systems analyst, architect, and developer, I offer the best in rapid, robust, and re-usable, systems engineering. Highest quality software implementation requires broad knowledge and understanding -- from utilization of high-level development frameworks to the implementation of low-level functions and algorithms over which frameworks operate. Extensive formal education and years of experience teaching and developing software have endowed me with the knowledge and skills to create highest quality applications in a wide range of areas. My specialties include; distributed educational systems, browser-based publication and rendering, virtual worlds educational environments, 2D and 3D graphics development, Internet-based collective intelligence and information processing and more. Given my broad background and extensive formal training and experience I'm ready and able to tackle any problem domain.

Qualifications

- Seasoned expert with years of experience totally immersed in Internet and World Wide Web development.
- Model Object Oriented Programming capabilities shaped and honed through years upon years of training and coding.
- Strong scientific background with extensive formal training in cognitive science and computational systems.
- Expert analytic and quantitative abilities demonstrated through:
 - Years of research design and experimental investigation in the areas of human cognition, neuroscience, and speech processing.
 - Development and delivery of advanced graduate and undergraduate courses in statistics and experimental design.
- Exceptional communicative abilities and capacity for public speaking.
- Advanced writing capabilities evidenced through numerous technical publications, grant proposals, and course materials development.
- Advanced drawing and graphics design skills acquired through formal education and continuing artistic productions.
- Craftsperson's attention to detail strongly supports both back- and front-end development.

Expertise

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|--|---|---------------------------------------|
| • Internet and World Wide Web development | • Scientific research methods and data analysis | • Technical and educational authoring |
| • Object Oriented Programming | • Languages and linguistics | • On-line educational systems |
| • XML processing and data modeling | • Speech signal processing and analysis | • Drawing and design |
| • 3D virtual environments (virtual worlds) | • Artificial and collective intelligence | • 2D and 3D graphics and animation |

Technologies

Languages	OS, Frameworks, API's and Databases	Tools and Miscellaneous Software
<ul style="list-style-type: none">• C++• XML/XSD/XSLT• Java• ActionScript (Flash)• Javascript• HTML• CSS• SVG• SQL• PHP• Python	<ul style="list-style-type: none">• Windows• unix (Solaris)• OGRE (3D graphics)• Collada (an XML 3D format)• Web Services (SOAP/WSDL)• Java SE• J2EE• Learning Management Systems (SCORM)• Content Management Systems• MySQL• Oracle• DB-2	<ul style="list-style-type: none">• Adobe Flash• Adobe Photoshop• Inkscape (SVG)• Anime Studio• Alias Maya (3D Development)• Altova XML Spy (XML data modeling)• Microsoft Visual Studio• Eclipse• MicroSoft Office• CVS• SVN

Professional Experience

Independent Developer, Immersive Education Initiative, 2008-2010

- Pioneered on-line teaching in virtual worlds environments on the Internet
- Explored and developed world-wide *standards* for Internet based virtual worlds development
- Developed 3D virtual worlds "Collaborative On-line Learning Environments" (COLE's)
- Single handedly created Collada-->OGRE 3D graphics transcoder ~~ a C++ application enabling platform-independent representation of 3D learning assets
- Worked on virtual-worlds research and development at U-Aizu, Japan
- Conducted several International Events to promote and educate the public about Immersive Education

Lecturer (part-time), Boston College, 2003-Present

- Developed and taught courses on Internet and WWW development
- Created the "Web-based Workbook" ~~ an XML-driven system for integrating and generating Web-based multimedia course-materials
- Wrote and published ~Exploring Internet Development~ to World Wide Web
- Wrote, drew and published assorted materials on 2D and 3D graphics and animation

Independent Contractor, Harvard Business School Publishing, 2007-2008

- Lead in the development of systems for content integration and deployment to LMS (Learning Management Systems)
- Developed XML transformer for browser-based presentation of XML-formated publications
- Developed Flash actionscript for XML processing and integration of Flash formatted multi-media content

Educational Systems Specialist, Altova, 2004-2007

- Designed and implemented system for live (on-line), Internet-based instruction for Altova, the premier world-wide XML development tools provider

- Developed automated registrations, course listings management, and scheduling systems
- Created an XML-based system for the generation of on-line educational course materials
- Created and delivered Web-based instructional materials (content) on XML standards for data modeling and XML processing with XSLT, Web-services, etc. reaching many thousands of customers world-wide

Java Instructor, Sun Microsystems, 2000-2004

- Developed and delivered instructional materials on Java, JDBC, J2EE, XML, and Web-services for Sun Microsystems
- Topics Included:
 - core java and OOP (Object Oriented Programming)
 - GUI development and "swing" programming
 - multi-threaded application development
 - network programming
 - distributed application development (RMI)
 - Model View Controller (MVC) architecture
 - Enterprise application development on J2EE app-server framework
 - Servlet/JSP API
 - EJB API
 - Web Services
 - SOAP
 - WSDL

Visiting Professor, Boston College, 1996-2000

Developed and delivered graduate and undergraduate-level courses:

- neural networks implementation and analysis
- perception and cognition
- statistics

Research Fellow, Boston University School of Medicine and Harold Goodglass Aphasia Research Center, 1997-1998

Conducted comparative neurolinguistic research in normal and aphasic populations.

Post-Doctoral Fellow, Harvard Medical School and Massachusetts General Hospital, 1995-1996

Designed and conducted psycholinguistic research in normal and neurologically impaired human populations.

Post-Doctoral Fellow, University of California, San Diego -- Center for Human Information Processing, 1994-1995

- Designed and conducted sentence-processing research in normal human populations.
- Undertook signal processing and analysis of the human speech signal contributing to further understanding of normal speech processing and the development of computational systems for speech recognition and sentence processing.
- Carried out experimental manipulation of the human speech signal in order to further understanding of the acoustic properties of speech and their relation to sentence and discourse comprehension.

Education

- **Ph.D.** (cognitive science). Florida Atlantic University, Boca Raton, FL (1994).
Dissertation: *The Role of Prosody in Sentence Processing*.
- **B.A.** (psychology). University of Massachusetts, Lowell, MA (1989).