

I am a Software Engineer with a professional background focused on interactive, 3D and virtual reality applications. My experience includes system design: determining requirements, designing modules and inter-module communication as well as implementation. My career goal is to offer these skills to create interesting graphic systems that provide interactive user experiences.

Areas of proficiency and expertise

Programming languages: C++ / Python / SQL
Programming APIs: OpenGL / VRJuggler / OpenSceneGraph / OpenSG / Boost / Bullet / ODE / open-DIS
Operating systems and platforms: Linux x86_64 / Windows

Working Experience

UNIVERSITY OF LOUISIANA AT LAFAYETTE: Virtual reality research scientist / developer December 2007 - November 2009

Description: I was a member of a research team developing a large scale virtual reality simulation framework for the Army Research Laboratory. My responsibilities included developing event management, collaborative session and physics frameworks.

Accomplishments: My contributions were integrated into the open-DIS open source library.

Technologies and tools: C++ / OpenGL / open-DIS / Bullet / VRJuggler / OpenSG / gcc 4.3 / Linux x86_64 graphics cluster

NANYANG POLYTECHNIC: Games programming lecturer January 2006 - December 2007

Description: I taught 3D, network and physics programming and was the technical leader for final year industry projects.

Accomplishments: Two teams under my supervision published articles in GameCareerGuide.com; it was the first time the school was featured in a games magazine. My initiative made this institution the first one in Singapore to actively use online 3D worlds for teaching & development.

Technologies and tools: C++ / OpenGL / Python / ODE / php / LSL / Second Life®

PURDUE ENVISION CENTER: Research assistant / programmer May 2003 - January 2006

Description: I used my programming skills to integrate virtual reality and visualization applications into an existing collaborative and video conferencing framework, to make distance collaboration sessions richer through immersion and more realistic interaction.

Accomplishments: My work was presented on multiple conferences (AG Retreat 2004 & 2005, SCGlobal 2004 & 2005, SIGGRAPH Emerging Technologies 2005).

Technologies and tools: C/C++ / VRJuggler / OpenSceneGraph / Python / Boost / Linux x86_64 / Windows / Client and server programming / Multithreading / Sockets / Multicast video in 3D environment

PURDUE UNIVERSITY: Computer graphics teaching assistant August 2002 - May 2003

Description: I taught Computer Graphics Programming and Game Development (CGT215) including lab practicals and lectures, and Introduction to Computer Animation (CGT241).

Technologies and tools: C/C++ / OpenGL / GLUT / GLUI / Win32 / 3DStudio Max / Maya

GRUPO LANKA: eCRM consultant February 2000 - June 2002

Description: As an e-Customer Relationship Management consultant, I specialized in 3-tier architecture interactive web applications. The projects on which I worked included newspaper subscription and web helpdesk systems.

Technologies and tools: SQL / Pivotal CRM/ C++ / VB / COM / ASP (VBscript and JavaScript) / ADO / MS SQL Server admin / Visual Interdev / HTML / DHTML / Crystal Reports

SUPERCABLE ALK: Field engineer April 1999 - February 2000

Description: I was in charge of setting up and administration of the system for local advertisement insertion, which was installed on a master site and 4 remote head ends.

Accomplishments: I fixed problems and stabilized the infrastructure on all 5 nodes, which had been failing for over 6 months. My new ideas contributed to adding animations and a sense of real time to the company's promotional channel. I contributed new advertisement sales ideas that were put into practice.

Technologies and tools: SeaChange Spot System / Digital video digitizing and storage / Ad Traffic and Billing System / VB / VBA

ALLOY 2107: Multimedia programmer

July 1998 - December 1998

Description: I was in charge of programming an interactive tale for children to be released on CD.

Accomplishments: The initial objectives for the project (integration of only 3 scenes) were satisfied several weeks earlier than expected, so by the end of the contract I had finished the whole book (12 scenes). The main objective was to integrate only this tale, but the library I programmed became a general framework for creating other tales that follow a similar structure. I introduced the company to new sound technology which allowed them to use higher quality, stereo audio for the first time.

Technologies and tools: Lingo scripting / Shockwave / Adobe Director® / Sound Forge / Sequences assembling / Sound and animations synchronization

SIMON BOLIVAR UNIVERSITY: Database technical assistant

September 1997 - April 1998

Description: As a technical assistant in the IT & Communications Center, I was in charge of database administration, development of projects using server/client philosophy and user support.

Technologies and tools: Oracle and Sybase RDBMS admin / Unix / SQL / PL/SQL

SIMON BOLIVAR UNIVERSITY: Software technical assistant

April 1996 - July 1997

Description: My responsibilities included software installation and configuration, error detection and fixing and user training.

Technologies and tools: MS-DOS / Windows

INTEVEP: Applications programmer

July 1996 - September 1996

Description: This was an internship contract in the Venezuelan institute for oil technologies research to design and implement a tool for chromatography analysis.

Accomplishments: The tool I programmed completely automates a set of tasks that were previously done manually by the researchers.

Technologies and tools: MS Excel / VBA

Education

PURDUE UNIVERSITY: Master of Science

May 2005

Description: I specialized in 3D and collaborative virtual reality programming.

Accomplishments: My work was presented on multiple conferences (AG Retreat 2004 & 2005, SCGlobal 2004 & 2005, SIGGRAPH Emerging Technologies 2005).

Technologies and tools: C/C++ / VRJuggler / OpenSceneGraph / OpenGL / Python / Boost / AG Toolkit

SIMON BOLIVAR UNIVERSITY: Cum Laude BE, Computer Engineering

March 1999

Description: A 5 years degree with specialization on 3D programming and databases architecture and administration.

Accomplishments: Graduation with Cum Laude honors.

Technologies and tools: C/C++ / OpenGL / SQL / PL/SQL / Oracle

Professional development

Conference presentations:

Integrating the DIS Protocol into a Fully-Immersive Simulation Application. To be presented in SEARIS @ IEEE VR 2010. March 2010. Waltham, MA.

Beyond Desktop Point and Click: Immersive Walkthrough of Aerospace Structures. To be presented in 2010 IEEE Aerospace Conference. March, 2010. Big Sky, MT.

Second Life for Digital Entertainment Technology education (poster). Second Life® Convention. August, 2007. Chicago, IL.

Virtual Meeting Space. SC Global. November, 2005. Seattle, WA.

AGJuggler. SIGGRAPH 2005 Emerging Technologies. August, 2005. Los Angeles, CA.

Access Grid Virtual Reality. Access Grid Retreat. April, 2005. San Francisco, CA.

Stereographics and Virtual Reality over the Access Grid. SC Global. November, 2004. Pittsburgh, PA.

Collaborative Virtual Environments over the Access Grid. Access Grid Retreat. June, 2004. Toronto, Canada.

Conference organization:

Chair of the Student Volunteer committee for IEEE VR. March, 2009. Lafayette, LA.

Student volunteer:

Immersive Projection Technology Workshop. May, 2004. Iowa State University.

IEEE VR. March, 2004. Chicago, IL.

SIGGRAPH. August 1997 in Los Angeles, CA; August 1998 in Orlando, FL; and August 2004 in Los Angeles, CA.
