

DAVID NIKDEL

949-436-3499 • david.nikdel@gmail.com

OBJECTIVE

To obtain a position as a Gameplay or Server Programmer in a fun and challenging environment.

SUMMARY

Versatile server and gameplay programmer with over seven years of professional development experience. Strengths include multithreaded programming, system architecture, strong sense of design, and excellent communication skills. Engineering philosophy emphasizes simplicity and precision wherever possible, using iteration and the layering of complexity to produce excellent results. Recent experience includes work on highly scalable systems designed to support thousands of concurrent users.

PROFESSIONAL EXPERIENCE

RED 5 STUDIOS

Irvine, California

Senior Server Programmer

July '07 - Current

- Primary developer on our large-scale, event-based, multithreaded networking library.
 - Wrote Windows/XBox (IOCP), Linux (epoll), and Darwin/BSD (kqueue) implementations.
 - Components included raw TCP, raw UDP, game TCP, game multichannel, and an HTTP client/server.
- Wrote tool chain to generate protocol code (message dispatching, structs, enums, versioning, etc.) from XML. This enabled rapid iteration and implementation independence, while greatly reducing human error.
- Responsible for overall server suite design (software) as well as datacenter layout and hardware recommendations.
- Automated crash dump collection, analysis, and reporting for both Windows (clients) and Linux (servers).
- Primary architect of our networked game object model which automated propagation of data fields, object scoping/subscription, event/command routing, and bandwidth stepping (object LOD) while supporting per-object parallelized simulation on the server.
- Wrote server-side physics library, pipelined to allow read-only, multithreaded collision queries against past physics states to support our lag compensation strategy. Benchmarked at 100k queries/sec on 16 core 2.3GHz blades.
- Designed and implemented a deterministic, framerate-agnostic weapon simulation on client and server.
- Worked closely with designers to create GAIA, our world simulation server and dynamic mission system.
- Designed the MMO inventory system, which included the database schema, abstraction layer, static data schemas, and MT-safe cache objects. This was used as the basis for most of our persistent storage.
- Wrote input and keybindings code using the Windows Raw Input API. Input was timestamped to enable sub-frame integration where appropriate.
- Made analog movement fundamental to the game simulation. Tweaked the input curves to match Halo.

Gameplay Programmer

May '06 - July '07

- Wrote the C++ back-end for an extensible Lua/XML-based GUI system.
- Wrote a stand-alone WYSIWYG editor for GUI modules to enable rapid layout/development using an all-script test harness (to mimic the game's C++ callback functions).
- Worked with designers to develop the third-person camera and aiming code. Solved problems of camera clipping and preemptive object avoidance. Experimented with different ways to reconcile discrepancy between aim position (third-person, over-the-shoulder) and projectile origin.
- Added pixel unit GPU skinning to the engine using R2VB (render to vertex buffer) on ATI cards and VTF (vertex texture fetch) on nVidia. Both implementations showed significant speedup vs. CPU skinning and traditional vertex unit GPU skinning.
- Wrote process management service for Windows/Linux with a platform-agnostic XML+XSLT interface.
- Rewrote scripts for the neutral/nightly build, reducing the build time from 60 to 8 minutes.

KINETICS, A SUBSIDIARY OF NCR

Orlando, Florida

Software R&D Engineer

Jan '05 - April '06

- Primary developer of CUSS kiosk control software which implements an industry standard interface to device peripherals and coordinates resource sharing across multiple vendors' applications. Now deployed on over 3,000 airport kiosks nationwide.
- Co-designed a patented file distribution scheme to push periodic updates out to kiosks in production, significantly reducing choke point bandwidth.
- Individually developed a Java version of our client/server transaction system (predates XML/WebServices) to support communication with legacy applications.

Software Development Intern

Jan '02 - June '05

- Wrote API interfaces for various peripheral devices including printers, barcode scanners, et al.
- Redesigned and optimized our multithreaded queuing application, reducing disk I/O time by 75% and search complexity to $O(\log n)$ while maintaining ACID compliance.

PERSONAL PROJECTS

WOW 360 – www.davidnikdel.com

Programmer / Designer / Sole Proprietor

Personal C# project that augments World of Warcraft, enabling play via an XBox 360 controller.

HIDDEN AGENDA GAME DEVELOPMENT CONTEST – www.hiddenagenda.com

Team Lead / Client-Server Programmer

Won \$25,000 (1st place) for design/development of MeChEM, an educational video game teaching middle school students the concepts of basic chemistry. Contributions included: overall game design, game client, game server/networking code, and 2.5D cutscene engine.

EDUCATION

UNIVERSITY OF CENTRAL FLORIDA

Orlando, Florida

Bachelor of Science in Computer Science

May 2005

National Merit Scholar, University Honors Program, Dean's List.
Concentrations in Computer Graphics and Physics.

COMPUTER SKILLS

APIs: Win32 API, Havok Physics, Lua API, OpenMP, OpenGL, DirectX 9, 3D Studio MAX SDK

Languages: C/C++, C#, HTML/JavaScript/CSS/XSLT, Perl, Lua, SQL