

# Philip Chu

Independent Computer Software Professional

linkedin@technicat.com

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## Summary

I'm a general-purpose programmer, accidental game developer, aspiring writer, and occasional manager. Since my first encounter with an Apple II in high school, I have over two decades of professional software development experience in the semiconductor, defense/government, computer graphics, Internet, mobile and video game industries, in addition to a bachelor's degree in computer science and engineering from MIT and a master's in computer science from Johns Hopkins University. My roles have ranged from individual contributor to lead programmer to project management (team sizes up to nine people) to startup operations.

Over the past several years, I have performed contract work under my own consulting firm, Technicat, LLC. Mostly 3D projects - tools, games and virtual worlds (Nendo, Darkwatch, Blue Mars), but sometimes something completely different (like Java programming on call center software), some project management, even writing a few levels worth of dialogue in a (cancelled) video game.

For my own projects, I develop Mac/PC, web and mobile games with the Unity engine, under the Fugu Games and HyperBowl brands (the latter is licensed from Hyper Entertainment), each with their own web sites and Facebook pages, and I supply sample projects on the Unity Asset Store. I've also contributed to the open source JFOR project on Sourceforge and provide original open source on <http://github.com/technicat>

I try to blog and tweet regularly, and maintain game development reference material and software development essays on my company web site, some of which have been digg'd and reddit'd and included as reading material in college courses and published on sites such as the MIT Entrepreneurial Review and the Nintendo developer site. The essays are also available as ebooks for the Nook and Kindle.

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## Experience

### **President/Owner at Technicat, LLC**

May 2004 - Present (8 years 10 months)

Software consulting and development (see projects below).

Internal projects include development and publishing of desktop Mac/PC, web and mobile (iOS/Android) games under the Fugu Games and HyperBowl brands (licensed from Hyper Entertainment) using the Unity game engine. Sample projects are published on the Unity Asset Store.

Open source contributions include scripts on the Unify community wiki, proportional column-width support in JFOR, and a general-purpose NSIS installer script.

### **Consultant at Heavy Water**

September 2011 - December 2011 (4 months)

Development of Playstation@Home content, including the RC Rally racing game. Worked on user interface, performance optimization, video, cameras, and simple physics.

**Consultant at Avatar Reality, Inc.**

December 2006 - January 2011 (4 years 2 months)

CryEngine-Scaleform evaluation and integration, physics tweaks, IME support, and Lua API development for third-party developers in the virtual world Blue Mars. Created Lua/Flash/Flex/PHP/MySQL examples for the developer wiki, and provided support on the developer forum.

**Consultant at Magnasync**

March 2006 - November 2006 (9 months)

Development of the Genesis 3 call center application, using Java and Swing for the user interface, ant, NSIS and Python for the build system, Eclipse and Postgresql.

**Consultant at Realtime Associates**

January 2006 - February 2006 (2 months)

User interface development with the Unreal engine for the ELECT BILAT training system. Implemented a reusable table widget in UnrealScript (similar to the Java Swing table component)

**Consultant at Izware**

May 2005 - June 2005 (2 months)

Updated the 3D modelling and paint tool Nendo for Windows XP with Visual C++. Optimized the core engine, updated the user interface, implemented a new installer with NSIS, and converted the help viewer to Microsoft help.

**Consultant at High Moon Studios**

August 2004 - May 2005 (10 months)

HUD development and various fixes for the front end, multiplayer split-screen, horseback-riding camera, on the vampire-western Darkwatch for PS/2 and XBox. Added PAL support. Contributed one line of dialog.

Used Visual C++, Incredibuild and Alienbrain.

*2 recommendations available upon request*

**Consultant at Vision Scape Interactive**

November 2003 - May 2004 (7 months)

Worked on Tech Deck: Bare Knuckle Grind, a PC, PS/2 and XBox game using Renderware. Implemented shadows, graphics optimization, video player and installers for four episodes.

**Consultant at Crave Entertainment**

November 2002 - January 2003 (3 months)

Troubleshooting and analysis of a third-party PS/2 and XBox game development project. Visited developers and vendors to pinpoint project bottlenecks and coordinate schedules.

**Senior Game Programmer at Hyper Entertainment**

January 2001 - June 2001 (6 months)

Maintenance and continued development of the HyperBowl arcade and attraction 3D bowling game. Optimized rendering, added performance analysis tools, experimental XML format, updated the data importer to work with newer content creation tools, modified the DirectX renderer to work with newer graphics cards, localized the game for French installations, tweaked the audio code, added support for new gameplay features.

**Consultant at Univessence Digital Productions**

October 2000 - January 2001 (4 months)

Prototyping of web collaboration software using Java and Swing, and a biometric identification project.

**Technical Lead at Neomar**

December 1999 - July 2000 (8 months)

Implemented the web proxy component of a WAP gateway using Java, for the first Blackberry web browser, deployed for the Motient Blackberry service. Implemented HTTP, transcoding, and SSL support.

**Senior Principal Software Engineer at PRI Automation**

December 1998 - December 1999 (1 year 1 month)

Planning and scheduling systems for semiconductor fab automation at Interval Logic using Tcl, Java, ObjectStore and Installshield. Technical lead of a five-member team responsible for all client-side components, based in Visual Basic, Java Swing and XML.

**Consultant at Nichimen Graphics**

October 1998 - November 1998 (2 months)

OpenGL programming for Mirai, Nichimen Graphic's latest-gen 3D content creation system. Visited graphics hardware vendors to discuss compatibility issues.

**Vice President at Digital Chameleon**

August 1997 - September 1998 (1 year 2 months)

Startup developing 3D computer graphics tools using Java and OpenGL, on Silicon Graphics and Windows.

**Manager of Core Software at Nichimen Graphics**

December 1995 - August 1997 (1 year 9 months)

Ported the 3D content creation software NWorld from IrisGL to OpenGL on Silicon Graphics workstations and onto Windows NT, using Allegro Common Lisp. Led a five-member team responsible for the base rendering, image processing, licensing, file and memory management systems. Worked with hardware vendors on compatibility issues.

**Member of Technical Staff at BBN Technologies**

January 1994 - November 1995 (1 year 11 months)

ARGUS data management system and PRISM acoustical analysis software implemented in Common Lisp and the Common Lisp Interface Manager.

### **Software Engineer at SAIC**

February 1993 - January 1994 (1 year)

Implemented and integrated the networking code for Distributed Integrated Simulation at the Johns Hopkins Applied Physics Laboratory. Participated in the MSTOW and Warbreaker wide-area networked simulation exercises. Received several letters of commendation from SAIC and APL management.

### **Research Assistant at NASA Ames Research Center**

June 1992 - August 1992 (3 months)

Summer job developing a graphical user interface for COLLAGE, an AI planning system, using the Common Lisp Interface Manager.

### **Software Engineer at Space Telescope Science Institute**

September 1990 - May 1992 (1 year 9 months)

Proposal preparation software for the Hubble Space Telescope. Created an Emacs mode for proposal entry.

### **Research Specialist at MIT**

September 1989 - September 1990 (1 year 1 month)

Developed simulators and sample applications for content-addressable memory (CAM) architectures, the Database Accelerator and Content Addressable Parallel Processor, at the Microsystems Technology Laboratory, running on Macintoshes and Unix workstations.

### **Member of Technical Staff at Texas Instruments**

June 1988 - August 1989 (1 year 3 months)

Worked on DROID, a VLSI CAD synthesis tool running on TI Explorer Lisp Machines. Implemented technology libraries and optimized the automated routing system.

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## Projects

### **Fugu Games**

June 2005 to Present

Members: Philip Chu

Web, desktop and mobile games.

### **HyperBowl**

November 2007 to Present

Members: Philip Chu

New versions of the original arcade game for web, desktop and mobile.

### **JFOR**

Members: Philip Chu

Contributed proportional-width table support to the JFOR XSL-FO to RTF converter.

### **Unity Pause Menu**

Members:Philip Chu

General UnityGUI-based pause menu.

### **Unity Maze Generator**

Members:Philip Chu

Unity maze generator script.

### **Reusable Installer**

Members:Philip Chu

A reusable NSIS installer. Define variables for company, product, etc. to customize it.

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## Publications

### **Technicat on Software**

Kindle and Nook January 20, 2012

Authors: Philip Chu, Phil Chu

Essays on software development.

### **Exploiting Parallelism in Game-Playing Programs**

MIT May 1988

Authors: Philip Chu

MIT Bachelor's Thesis - comparison of parallel search performance of a reversi program written in Multilisp and running on a 33-processor machine.

### **Taking a Whirl Tour on the GameCube**

Nintendo Software Development Support Group December 2002

Authors: Philip Chu

Postmortem article on a GameCube title.

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## Skills & Expertise

**HTML 5**

**Amazon EC2**

**Silverlight**

**WPF**

**WCF**

**Python**

**Video Games**

**OpenGL**

**Software Development**

**XML**

**Game Development**

**Java**

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## Education

### **The Johns Hopkins University**

MS, Computer Science, 1991 - 1993

Activities and Societies: Teaching assistant for Computer Literacy 101.

### **Massachusetts Institute of Technology**

S.B, Computer Science and Engineering, 1984 - 1988

Activities and Societies: Research assistant in the MIT AI Lab for developing machine vision and natural language programs on Symbolics Lisp machines. Sales rep at the MIT Microcomputer Center.

### **Iowa City West Senior High School**

High School, 1982 - 1984

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## 2 people have recommended Philip

"I have had the pleasure to work with Phil on a couple different projects and my experience has always been very positive. Phil is an intelligent and driven individual who is not afraid to think outside of the box. I hope to get the chance to work with Phil again in the future!"

— **Shane Nakamura**, *Concept Artist, Sammy Studios*, worked directly with Philip at High Moon Studios

"Phil was a joy to work with. He had a positive approach to solving problems and happily took direction. He put together solutions quickly that worked, there's really nothing more that we could have wanted."

— **Tom Plunket**, *Technical Architect, Sammy Studios*, managed Philip at High Moon Studios

[Contact Philip on LinkedIn](#)