Jon D. Newbill -- Bitworks Systems Inc (S-Corporation)
1319 Los Amigos Ave, Simi Valley, CA 93065
jon@bitworkssystems.com (805) 404-7384

GENERAL INFORMATION

Principal Software Engineer with many years of programming experience. Contract software engineering since 1984 as Bitworks Systems. Many contracts with Walt Disney Imagineering Show/Ride and R&D. Embedded medical device software for biomedical. Projects have included two long term **reusable software products** in use for over 20 years by major theme park client along with **custom compilers, embedded medical products, real-time programming, ride control systems, simulators, software radio, robotics, commercial Windows applications, custom games** for theme parks and **commercial video games.** Expert in **C++**, fluent in **C#** and **OOD**. Software emphasis with, schooling and experience with hardware. Familiarity with PCB design.

LINKS

Website: bitworkssystems.com
LinkedIn Profile: https://www.linkedin.com/profile/preview?vpa=pub&locale=en_US
Robotics: http://discovermagazine.com/2001/mar/featrobots#.USaZUGdIOWU
Video Game: http://www.youtube.com/watch?v=auAtyiiMJwQ

SKILLS

C/C++ C# Objective-C C++/CLI iPhone Win7 WinXP iOS TFS Team Foundation Server, Mercurial TortoiseHg CodeCollaborator Win2000 Visual Studio .NET MFC WCF TwinCat III FTDI USB Java ModBus Daz3d Studio Open-GL DirectX Source Safe STL VxWorks Tornado QNX pSOS VME-bus UML Rational Rose Enterprise Architect Unix yacc lex awk Python TCP/IP Netware Macintosh SQL CTREE Database Microchip-PIC Intel-x86 TI MSP430 Chipcon-radios 8/16 bit micros WinApps Compilers Robotics Real Time Ride Control Simulation Video Games Automated Test OrCad® Capture PCB Layout Macromind® Director Pascal BASIC Fortran

PATENTS

Patent number: US 8,096,987 (01/17/2012)
http://patft.uspto.gov/netacgi/nph-Parser?Sect1=PTO2&Sect2=HITOFF&p=1&u=%2Fnetahtml%2FPTO%2Fsearch-bool.html&r=1&f=G&l=50&co1=AND&d=PTXT&s1=80,96,987.PN.&OS=PN/80,96,987&RS=PN/80,96,987
Patent number: US 8,282,627 B2 (10/09/2012)
http://www.uspto.gov/web/patents/patog/week41/OG/html/1383-2/US08282627-20121009.html
International Application No.: PCT/US2007/085592
http://patentscope.wipo.int/search/en/WO2008067286

EDUCATION

iPad and iPhone Application Development at Stanford via ITunes University (2012)

Microsoft Team Foundation Server 2010 for Developers training (2011)

California State University Northridge
BS in Computer Engineering, minor in Computer Science (BS 1979)   GPA=3.37
Graduated Cum Laude   Deans List   Member of Tau Beta Pi Engineering Honor Society

Jon D. Newbill -- Bitworks Systems Inc (S-Corporation)
1319 Los Amigos Ave, Simi Valley, CA 93065
jon@bitworkssystems.com (805) 404-7384

CONTRACT PROJECT HISTORY

Walt Disney Imagineering (contract) Principal Software Engineer. 08/12 to Present (Glendale CA) Created next generation of Imagineer's Control Language (ICLX). ICL is a custom compiler for Rockwell/Allen-Bradley Programmable Logic Controllers (PLC's). I developed the original version of ICL in 1990. This new version works with Rockwell Control Logix5000 Controllers. Created in C++/CLI (33K lines) running on .NET 4.5

PLC Software **OOD** Library for use in Show Playback System.   Written in TwinCAT structured text language.

TCP/IP driver for TwinCAT 3 written in C++ that allowed PLC structured text programs to send and receive UDP datagrams.

Wrote embedded C for interactive show devices that simulated paint brushes using color LED's, fiber optics and IR communication. Target processor was MicroChip PIC using CCS compiler.

DCR Engineering (contract) Principal Software Engineer. 10/15 to 02/15 (Mulberry FL)

Follow on project for previous API interface completed in 2013 requiring new C++/CLI wrapper for alternate 3rd party API DLL. Completed on time and in budget.

IRIS DIAGNOSTICS.(contract) Principal Software Engineer. 11/13 to 08/14

Designed and coded modules in C# .Net for next generation automated medical lab testing equipment. Modules included unit test code for automated unit testing.

DCR Engineering (contract) Principal Software Engineer. 09/12 to 02/13 (Mulberry FL)

API interface between Emergency Alert system and 911 Computer Automated Dispatch system.   I created application to bridge interface between old style DLL API interface and TCP ModBus Master. Created C++/CLI wrapper for DLL and Forms application in C# on .NET 4.0. Now installed in Emergency Center Southern Oregon for 911 dispatch in Medford OR.

VEECO Process Equipment (contract) Software Engineer. 03/12 to 8/12 (Camarillo CA)

Machine control of semiconductor manufacturing equipment in C++, C# on Visual Studio. Added features to legacy equipment and designed and programmed next generation equipment using TCP/IP communication between general purpose computer and PLC components.

Bitworks Systems Inc. Principal Software Engineer. 09/11 to 03/12 (Simi Valley CA)

Created RPN calculator application for IPhone using objective C. Available on ITunes App Store. https://itunes.apple.com/vg/app/bitworks-rpn-calculator/id505765679?mt=8

IRIS DIAGNOSTICS. Principal Software Engineer. 01/11 to 09/11

Fixed bugs in existing robotic medical lab automation product and planned next generation automated lab testing equipment. Code development in C# using Team Foundation Server TFS for Software Development. Customized TFS CMMI template to match existing development process.

DISNEY WORLDWIDE SERVICES. (contract). 08/10 to 05/11 (Anaheim CA)

Added support for new Allen Bradley PLC processors to original ICL compiler I created in 1990.

BOSTON SCIENTIFIC NEUROMODULATION. Principal Firmware Engineer. 8/08 to 1/11 (Valencia CA)

Jon D. Newbill -- Bitworks Systems Inc (S-Corporation)
1319 Los Amigos Ave, Simi Valley, CA 93065
jon@bitworkssystems.com (805) 404-7384

Embedded design and programming for implantable Neuromodulation stimulator. UML model design in Enterprise Architect. Code development in IAR Embedded Workbench C++ Compiler and TI MSP430.

INFUSION SYSTEMS / BOSTON SCIENTIFIC / ADVANCED BIONICS / MEDICAL RESEARCH PRODUCTS

Sylmar CA   Principal Software Engineer. 1/03 to 8/08

Embedded design and programming for two RF components used for implanted drug pump. Used IAR C++ Compiler and TI MSP430 Chipcon CC1000 software controlled radio along with FTDI USB interface to WinXP embedded platform. Software Failure Modes and Effects Analysis (FMEA). Contributor on two patent proposals. Semi-Automated test software. Mentored software engineers in robust software techniques and use of yacc/lex to create a scripting language.

COMMON POINT TECHNOLOGIES, Senior Software Engr. www.commonpointinc.com 5/02 to 6/02 (Contract)

Commercial Windows application using Visual Studio and **Open-GL**. The application integrates scheduling information with **3D modeling** to show 3D animation of how a construction project is built based on the schedule. See http://www.commonpointinc.com/. Now by Bentley Construction. Video Demo

---

WALT DISNEY IMAGINEERING, Show Ride/R&D Senior Software Engr. Glendale CA 12/89 to 9/02 (Contract)

2000-2001: Worked on 4D **Open-GL Win2000** application which integrates scheduling information with **3D modeling** data. This project spun off to separate company (see above).

1999-2000: One of three programmers working on a large autonomous **walking robotic system**. Wrote safety code to check sensor compliance (**QNX**) and the radio remote human interface control program that monitored and issued commands to the robot (**Win2000**). Robot weighed over 5 tons and was featured in the March 2001 issue of Discover magazine. See http://discovermagazine.com/2001/mar/featrobots#.USaZUGdIOWU

1993-2002: Wrote ride control systems in **C++** for **Indiana Jones** vehicle Disneyland, **Tower of Terror** WDW,DCA, **Rocket Rods** Disneyland and **Pooh's Hunny Hunt** in Tokyo Disneyland . Created the Imagineer's Ride Library **(IRL). IRL** is a reusable C++ library targeted for development of ride control software and includes **TCP/IP** based monitoring system for real-time control and logging of any application I/O point. IRL has been used on several ride control systems. Ported IRL from **pSOS** to **QNX** and **VxWorks**. Since 2002 **IRL** has been used in Disney parks world wide including multiple **Tower of Terror** attractions.

1993-1995: Wrote interactive arcade games in **Borland** and **Microsoft C++** for Disneyland Paris and Epcot at Walt Disney World. Included custom software to transfer animation sequences from **Macromind Director** for use with custom animation software.

1991: Added communication & user interface features to animatronic figure playback system (SIU).

1990: Designed custom language and compiler **(Imagineer's Control Language ICL)** for programmable logic controllers (**PLC**). Over 20 years later ICL is still in use in Disney theme parks world wide. Tools used were **yacc**, **lex C/C++.** In 2002 upgraded to run as Win32 application on **WinXP** using **Visual C++.net**. In 2012 created next generation of ICL called ICLX.

Jon D. Newbill -- Bitworks Systems Inc (S-Corporation)
1319 Los Amigos Ave, Simi Valley, CA 93065
jon@bitworkssystems.com (805) 404-7384

1990: Created a ride simulator to display vehicle motion through ride with a real time color display. Specific rides defined with a ride simulation language. During execution parameters may be examined or modified. (9,300 lines in 390 hours)

MICROPOLIS, Senior Software Engineer. Chatsworth CA 1/86 to 8/89 (Contract)

Created custom test language compiler and runtime for testing of PC boards with automatic test equipment. Tools used were **yacc**, **lex** and **Microsoft C.**   The compiler was used for multiple generations of disk drive electronics test systems.

SYNDEIN, Software Engineer Lead, Glendale   2/83 to 2/84 (Contract and Employee)

Wrote the commercial version of **Donkey Kong** for the **VIC-20** (10K lines in 500 hrs). Supervised conversion of other arcade games to home computers. (See http://www.youtube.com/watch?v=auAtyiiMJwQ)

References and sample work furnished on request