

Daniel Koh

Forney, TX

Email me on Indeed: <http://www.indeed.com/r/Daniel-Koh/935543b118773912>

Software development and test engineer with twenty years of experience in software development process. Excellent knowledge of software developing, debugging, and testing. Admin level knowledge of Linux system and GNU tool chain. Extensive programming skills in C/C++, Qt framework, Android SDK, and shell scripting.

Work Experience

Embedded Software Engineer

Phase Dynamics Inc - Tyler, TX

June 2014 to June 2018

- Developed firmware in C++ for NEXIA BR200 IoT product
<https://www.nexiahome.com/certified-products/nexia-br200>
- BR200 serves as a central hub for an entire network of home automation devices.
- Processor: MediaTek MT7620a (600MHz MIPS SoC processor)
- 128 MB DDR2 / 256 MB NAND Flash
- Ethernet - 1 WAN Port (10/100Base-T)
- WiFi - IEEE 802.11n
- OS: openwrt-r40360-20150128.tar.bz2 bundled (Embedded Linux)
- Linux Kernel: 3.10.34 with patches from Sercomm
- Rootfs: SquashFS
- Developed "Network Manager" package [WiFi & Ethernet support in AP Client mode]
- Build System : Buildroot
- Developed "CSOD GUI" - Qt embedded application for CSOD thermostat for HVAC System.
- Support for GUI for wireless zoning system thermostat
- Written in C++ and embedded Qt 5.4
- Ongoing project
- Developed "PM Builder Plus" - Desktop GUI Application written in C++ and Qt 5.7
- To produce a hexadecimal data file for HVAC embedded control software.
- Convert file format between Excel and Hexadecimal
- Produce files from Hex to Excel, Excel to CStruct, Excel to Html.
- Allow the user to edit system values within the tool.
- Developed "R2" - Desktop GUI Application written in C++ and Qt 5.7
- Serial port application used by software test engineers to create automated test cases for embedded control software.
- Communicate with target system via RS-232 and reads the control outputs and records into a script file.
- Used in creating automated test script for HVAC embedded control system.
- Interact with intermediate 16 channel Arduino relay board to control the target system.
- Developed "Sparky" - Desktop GUI Application written in C++ and Qt 5.7
- Tcp/IP based simulation software to test embedded software

- Support communication with embedded code either in Eclipse IDE debugging mode or desktop compiled binary executable
- Communicate via user defined ITC protocol between simulator and embedded code
- Client/Server based – Simulator is the server - Embedded code is the client
- Developed “Binary Builder” – Desktop GUI Application written in C++ and Qt 5.7
- To produce a binary format data file for HVAC embedded control software.
- To program target system via YMODEM.
- Json file structure.
- Allow the user to program the control board directly via YMODEM protocol from the Binary Builder.
- Json file structure used.
- Developed “Standard Service Tool” – Android based Mobile Smart Phone App
- A tool to support field technicians to easily access to the diagnostic information for the faulty system on site.
- A hand-held diagnostic monitoring app for Android phone.
- Support for reading system data via Wi-Fi (via AirConsole), Bluetooth LE, USB to RS 232 data port.
- Displays system data in graphical plot.
- Provide the user access to the company server and do other things.
- Provide the user with detailed diagnostic information to help the user understand system status in text, image, and video.
- Performs analysis and design of software system architectures for Wi-Fi network for connected home system bridge products, and graphical User Interface (UI) for CSOD thermostat products.
- Works jointly with other Software Engineers on system and product architecture and related design strategies.
- Develop and perform design test verification
- Technical content primarily related to software, including, but not limited to, source code, executable, architectural specifications, and theory of operation.
- Provide assistance to ensure tests are performed safely and correctly.
- Participate in product conceptions, design reviews and qualification product approvals.
- Work and interact in a group setting with other designers to meet schedule dates.
- Provide technical guidance and support to the junior developers and interns.
- Work closely with a remote dev team in Chennai, INDIA.
- Tools used: Git, Peforce, Pivotal story.

Software Test Automation Engineer (Full Time Contractor)

Savant – www.savant.com - Hyannis, MA

January 2014 to June 2014

Home automation mobile apps and system controller

- Created automated regression suite from scratch using QMTest
- Tested home automation mobile apps on iPad, iPhone, Android devices, and other mobile devices
- HVAC – System Controller
- Audio, Video, Apple TV, OSD
- Wifi based
- Create automated test cases using Webdriver with Python binding.
- Investigated different test automation options:
- Appium
- Eggplant

- Performed software and hardware configuration (mobile app and hardware system controller) using the company developed system configuration tool.

SQA Engineer

EXA Corporation <https://www.3ds.com/products-services/simulia/products/powerflow> - Burlington, MA
May 2011 to December 2013

3-D digital wind tunnel simulation and CFD modeling software

- QA project lead for PowerFLOW/PowerCASE (CFD Physics 3D Modeling) product.
- Created automated test cases using Python.
- Performed test case code reviews.
- Crated test plans, and supporting documents.
- Managed regression suite. (QMTTest based)
- Provided technical guidance and support to members of the SQA team on the content of test plans, design, configuration, application of test environments, and tools required for application testing.
- Managed crontabs on all supported platforms and monitored regression results.
- Performed failure root cause analysis on a daily basis.
- Worked with development team to produce tools and scripts to aid in test automation
- Maintained various test scripts and Makefiles
- Developed GUI based in-house software to run manual test cases in semi-automated way.

Freelance SQA Engineer

Multilingual QA
May 2009 to May 2011

Software localization

- Performed software/document/website localization (English into Korean)
- Performed manual testing in linguistic, cosmetic and functional issues on commercial website and software
- Performed manual localization testing (English into Korean)
- Performed commercial website localization testing (English into Korean)
- Focused on verifying localization in documentation, online help, website contents and functionality (hotel, airline, rental car reservation and e-commerce)
- Projects worked on:
- Chartwell - Online Casino
- (<http://tst1gm.chartwelltechnology.com/casino/lobby/index.jsp?lang=ko>)
- Performed all types of verification on the localized website
- Verified visual, functional and linguistic requirements.
- Verified balance transaction, game rules, error handling and all other scenarios
- N-Trig (<https://www.n-trig.com>)
- Performed software localization from English into Korean using SDL Passolo
- Performed User's Manual localization from English into Korean
- Performed all types of verification on the localized software and documentation
- Touricoholidays (<https://www.touricoholidays.com>)
- Performed website localization from English into Korean
- Performed localization QA
- Filed bug reports with advanced comments
- Verified bug fixes
- Provided overall review comments and test reports
- Reviewed technical documentation

- Wrote initial test specs and updated later
- SMA Solar Technology (<http://www.sma.de>)
- Verified localized built-in firmware (Korean) that is used in the Solar Technology Machine
- Performed QA in localization in documentation
- Alpha-bio Inc (<http://www.alpha-bio.net>)
- Translated User's Manual from English into Korean

Sr. Member of Technical Staff

Cadence Design Systems – www.cadence.com - Chelmsford, MA
September 2000 to November 2008

EDA Simulation and Verification Software

- Developed various in-house software tools/script.
- Tested EDA software (Cadence Functional Verification Software - Incisive)
- Tested various types of API for VHDL, Verilog, SystemC and C++
- Managed multiple project schedules to assure product test in complete in time
- Project lead: Managed test project teams in US and India
- Solid understanding of software quality assurance methodologies and software development life cycle
- Tested C++ class library based NC-SystemC for 6 years including NC-Vhdl, NCVlog, NCSim, SimVision, IFV/IFH, VPI, VHPI, DPI, PSL
- Solid understanding of RTL design process using EDA tools
- Reviewed functional specs, test plans and provided technical feedback
- Created test plans for validating product functional, performance and system requirements
- Performed GUI/Batch manual test – Created test instruction sets for the manual tests
- Performed test automation using manual test cases
- Developed, updated and maintained automated/manual test program in C/C++, SystemC, VHDL, Verilog, Perl, Tcl, Shell
- Performed black box testing - unit level feature, cross functional, license and regression testing
- Filed product change request (PCR) against software defects using a bug tracking system
- Performed root cause analysis (RCA) for the customer failures to determine root cause of failures
- Verified code changes and hotfixes
- Monitored regression results and generated failure analysis report on a daily basis
- Developed GUI test automation tool (record and replay gui commands) and various types of in-house test tools using Perl, Tcl/TK and Shell Scripts
- Managed R&D test branches (test branch merging)

Embedded Software Engineer

Phase Dynamics - Richardson, TX

Product : RAZOR

- Developed a real time embedded software application measuring microwave, frequency, temperature, reflected power from the water/oil mixed liquid in the oil pipe.
- Displayed outputs via LCD screen and received user inputs via infrared touch-less buttons.
- Developed built-in data logging system via USB 2.0 interface.
- Developed built-in firmware upgrade system via USB 2.0 interface.
- Developed built-in file (csv) upload/download system via USB 2.0 interface.
- Processor: TI TMS320C6748 DSP
- Operating System: SYS/BIOS
- SDK: PDK_OMAPL138

- Host: Windows10, Ubuntu
 - Protocols: ModbusRTU, I2C, HART
 - Programming language: C
 - Developed desktop applications for system monitoring (message snipping) and uploading/downloading CSV files using Qt framework for customers.
 - Developed a desktop application using C++/QT Framework for the system calibration.
 - Managed requirement spec, test spec
 - Installed and maintained Bugzilla, Testlink and other tools on a need basis.
 - Reviewed system spec and hardware selection for the phase2 system upgrades.
- Product : ANALYZER
- Maintained existing product - fixing bugs, adding new features
 - Processor: TI TMS320VC33 DSP
 - Build and release

Education

M.S in Computer Science

Central Michigan University - Mount Pleasant, MI

May 2000

Design

left school

2000

B.S in Computer Science

Soongsil University - Seoul, KR

February 1997

B.S in Physics

Dankook University

February 1993

Skills

- Ubuntu
- TCP
- C++
- C
- Perforce
- Solaris
- Shell Scripting
- Eclipse
- Fedora
- Perl
- Windows

- Android
- Git
- Linux
- Test management tools
- MySQL
- TCP/IP
- SharePoint
- SDKs
- Python
- OS Kernels
- Computer networking
- Software development
- Mobile devices
- WAN
- Embedded software
- Software testing
- Microsoft Excel
- Debugging
- PCR
- SDLC
- Regression analysis
- Customer service
- HVAC
- Internet of things
- Ethernet
- UI
- HTML5
- Test automation
- Scripting
- Computer science
- Firmware
- Translation
- Mobile testing
- Research & development
- Test cases
- Multilingual
- Mobile applications
- JSON
- Trigonometry