

David Ching

System Software Engineer

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OBJECTIVE

Position as a lead or individual contributor with an excellent team, developing System software that is performant and simple to maintain.

EXPERTISE

- **15+** years of MS Windows System Development – Win32/UWP, multi-threading, process injection, API hooking, Windows hooks, Accessibility
- **15+** years of native GUI with Windows and Mac - C++/Qt/Python/PyQt/PySide2/QtWidgets/QML/MFC
- **15+** years of .NET Desktop - C#, WinForms, WPF
- **8** years of Windows Full Stack Development - ASP.NET MVC, LINQ, Entity Framework, SQL Server, HTML5, JavaScript, jQuery, SPA
- **1** year of Cloud - AWS (S3), Azure (SQL, VM's), Flask

EXPERIENCE & AWARDS

- Microsoft MVP - Visual C++ (2007-2014)
- Nokia Certified Qt Developer (2009)
- Shipped popular apps including Logitech G HUB, SetPoint, SanDisk U3, Borland C++, Turbo Pascal
- Hands-on project management (2001-2004)

OTHER

- [Code Repository](#) – public code samples
- [GUI portfolio](#) – screenshots of previous projects
- Favorite Tools – Visual Studio, JetBrains, TortoiseGit, Total Commander, LINQPad, Process Explorer

EMPLOYMENT

Logitech (10/21 – 3/24). Principal Windows Software Developer, enhanced G HUB configuration software to support RGB lighting in new devices, and the “Activate light with webcam” Windows feature of Logitech’s Litra lights. Developed the prototype of MIXLINE audio mixer software. Wrote several internal utilities to manipulate JSON payloads used in G HUB. *Technologies:* Visual C++, React JS, Python, firmware interfacing.

Rad AI (6/20 – 9/21). Staff Engineer, lead two offshore consultants developing Windows app that integrates with Nuance PowerScribe and M*Modal Fluency, the radiologists’ leading reporting software packages. The Rad AI client extracts report text and inserts AI generated impressions into the radiology reports. *Technologies:* Windows process injection, Windows hooks, Internet Explorer hooks, Log4Net appender, WPF, client upgrader, WiX.

SS&C / Advent (12/18 – 6/20). Staff Engineer, added investment portfolio features to Advent Portfolio Exchange (APX), a legacy Enterprise software system used by wealth management professionals. *Technologies:* MS SQL Server, COM, ASP.NET, Infragistics, C++, MSBuild, WinForms, Jenkins CI.

Customer Lobby (06/16 – 12/18). Senior Software Engineer, responsible for development and release of *Direct Connect*, a Windows Desktop app which exports customers and transactions from nearly 100 desktop invoicing systems, used to create postal mail sent to repeat customers. Development tasks include reverse-engineering each invoicing system and generating appropriate SQL queries, writing memory efficient streaming data collection, writing attractive Setup Wizard and Diagnostics UI, ensuring robustness by maintaining bulletproof NSIS installer/uninstaller, exception handlers to the Sentry web service, using NLog for logging, and proper operation without user login via Windows Task Scheduler. Lead offsite consultant, build, QA, release, each version. Prototyped Python rewrite using persistent websocket connections to Flask server. *Technologies:* Python, Python.NET, Websockets, Flask, Reverse Engineering, IDA Pro, SQL, ADO.NET, ODBC, LINQ, QuickBooks, WinForms, WPF, C#, Web API, Downloader and Updater, NSIS Installer, Windows Task Scheduler, Agile, JIRA, Git, Jenkins, Sentry, AWS S3, NLog, JSON.NET.

DCSoft (06/04 – 06/17). Independently consulted for clients including:

Blue River Technology (01/17 – 06/17). Wrote a Python/Qt app where the user visually places graphical rectangles, denoting agricultural field plots, on aerial images and exports the plots’ GPS locations to the open source QGIS application. The plot rectangles are labelled with text and can be rotated, sized, moved, and zoomed. Diagnosed thorny issues such as QImage inability to support BigTiff files, as well as problems with rotating QPolygon in the proper coordinate systems. *Technologies:* Python, PyQt, PyCharm, QGIS.

ERG (11/12 – 12/17, 06/07 – 02/10). Designed and implemented ERG Timecard, a web application for IT contractors to enter weekly timecards in a very simple way that reduces mistakes and encourages their managers to approve them quickly. It lets the administrator send individual reminder e-mails as necessary. Wrote a supplemental internal web application that provides deep visibility into the company’s financials based on realtime contractor hours from the timecards and advises timely replenishing of purchase orders when the prepaid hours are running low. It also shows the performance of account managers and recruiters who place the contractors. A separate Winforms app interfaces with QuickBooks to generate invoices and receipts. *Technologies:* C#, ASP.NET MVC, WinForms, HTML5, JavaScript, jQuery, SQL Server, Entity Framework, LINQ, QuickBooks SDK.

Salfeld Computer (8/10 – 12/15). Provided key components of Salfeld Child (parental) Control, including blocking access to web sites and Windows system settings. Wrote very robust Windows client library and ASP.NET WebAPI for Server Side Events (SSE), which client says is “the best solution for Delphi”. The web server pushes notifications (e.g. “stop surfing now”) to the connected Child Control application. Created custom, high performance client-side hash table for blacklisted urls. Altered Internet requests for compatibility with Google Safe Search. *Technologies:* C++, API Hooking, WinInet, ASP.NET Web Forms, ASP.NET MVC/ WebAPI, SQL Server, DDE.

ZeroNines (2014– 2015). Created prototype of Windows utility to mirror SQL Server transactions. *Technologies:* Qt, API Hooking, Named Pipes, Winsock, MS Message Analyzer, API Monitor, TDS, SweetScape 010 Editor (formats binary data).

GEO Semiconductor (06/15 – 08/15). Created Windows GUI to tune Image Quality algorithms. The GUI controls were specified in a JSON file so that the UI could be quickly customized for each customer. *Technologies:* VC++, GNU, Qt, Qt Creator, JSON, regular expressions, dynamic input validation, process launching and stdout redirection.

Trimble Navigation (12/12 – 05/13). Tuned simulation of agricultural controllers. Fixed race condition in core of simulation task switcher by re-implementing with Windows Fibers. *Technologies:* C++/MFC/Qt, Windows IPC, multi-threading, fibers, memory leak detection, Git, CVS.

Apple (10/11 – 07/12). Enhanced Windows version of Apple asynchronous library *Grand Central Dispatch*, used in iTunes for Windows. *Technologies:* C, threading, asynchronous I/O, cross-platform.

Cisco (02/10 – 08/10). Supported [Stream Manager video surveillance software](#). Analyzed Wireshark captures, debugged showstopper threading issues, fixed .msi build system. Architected and built restarter program and health monitoring redundancy. *Technologies:* Winforms, C#, sockets.

IronKey (09/08 – 02/10). Designed utility to unlock, format, etc. IronKey secure flash drives and architected queue of device requests to prevent multi-threading errors by Junior engineers. Led three developers in simultaneous Windows/Mac release. Served as Windows expert: fixed incorrect manifests and redistributables, signing of the manufacturing driver, etc. Implemented Windows system internals such as detecting open file handles when ejecting the device. *Technologies:* C++, Qt, UI Skin, MS DDK.

Amicus Wireless (12/07 – 08/08). Designed and built a Windows Control Panel for WiMAX adapter, featuring a tabbed UI. The WPF UI far exceeded the client’s expectations in both look and ease of use. *Technologies:* WPF, Winforms Interop, .NET Interop, C#.

NomaDrive (09/06 – 01/07). Rewrote hooking engine of application virtualization software. Created installation wizard and setup package. *Technologies:* C++, API Hooking, MadCodeHook, NSIS.

SanDisk (10/05 – 06/07). Wrote IE/Firefox toolbars and MIME filters; developed loaders for browser add-ons that don't require admin access to the Windows registry. Prototyped TrustedSignins security applications using UI skins and wizards. Shipped DHTML-based UI and desktop icon for U3 USB keys. Devised simple localization mechanism and supporting tools to quickly translate into 30 languages. Prototyped Windows AppBar that docks when USB key is inserted. Used Crypto API to write a hashing

function. *Technologies:* UI Skin, MFC, GDI, GDI+, ATL, COM, BHO, DHTML, API Hooking, AppBar, Crypto API, XML, Wizard Property sheet.

Logitech (09/05 – 12/07). Architected and built MenuCast translucent windows, providing 10' UI for [MX Air mouse](#). Created several Vista gadgets which hosted an OCX control to show status of Logitech devices. Created Wizard-97 firmware update utility. Enhanced core of Logitech SetPoint to execute different mouse and keyboard macros depending on the active application. Created OEM customizations for well-known OEM's. *Technologies:* Layered (transparent) windows, Vista gadgets.

Qualcomm (12/04 – 09/05). Wrote the UI for **Linksys Control Utility** and the **Airgo Wireless Client Utility**, shipping with various networking cards. Devised strategy to control Internet connectivity with IPHelper API and NETSH.EXE. *Technologies:* UI Skin, MFC, GDI, IPHelper.

Loyalty Ventures (06/04 – 06/05). Wrote an Internet client that interacts with popular browsers. It embeds the Lua scripting interpreter, allowing customization with Lua scripts. Packaged in a small 220 KB download, it is extremely easy to deploy. Wrote an Internet Explorer toolbar. Wrote an animated sliding "Toast" window which emphasizes smooth scrolling. *Technologies:* C++, Lua, Microsoft Accessibility, User Mode API hooking, Threading, WinInet, WTL, Nullsoft Installer.

Logitech (05/02 - 05/04). Managed four developers and was solely responsible for architecting and writing the core functionality of **Logitech SetPoint**, a mouse and keyboard configuration utility. Also managed the development of the **Media Desktop** full-screen application for listening to music and viewing pictures and videos from a distance of 10'. Coordinated efforts with the localization and marketing teams in Switzerland as well as with QA in the United States. *Technologies:* VC++, MFC, XML localization, WMP, WinLogon.

Proxim (11/00 - 04/02). Managed 3-5 developers responsible for designing and building networking software utilities including **Proxim Symphony** and the **Orinoco Client Configuration Utility**, which *PC Magazine* called, "[the best of the three \[reviewed utilities\]](#)." *Technologies:* VC++, MFC controls, full WinXP support, tray icons.

DCSoft (01/96 – 10/00). Consulted for **Logitech** to create Windows application for remote control shipping with IBM Aptiva PC's, and iTouch Windows application shipping with first Logitech Internet Keyboard.

Borland (03/90-12/94). Designed and built the Address Book of a **Sidekick for Windows** prototype. Project Lead for the **Turbo Pascal for Windows** Integrated Development Environment, version 1.5. Enhanced environments in **Turbo C++** for DOS and Borland C++, versions 2 and 3. *Technologies:* C++, Quattro Pro object-oriented application framework, Windows custom controls.

HP (01/87-03/90). Enhanced HP LaserRX, a Windows application which presents performance metrics from HP minicomputers. *Technologies:* Windows 2.0, real-mode memory.

EDUCATION

University of the Pacific (1984-1988). **BS in Computer Engineering** (3.98/4.0 GPA).