# David Ching

## GUI, Windows, and Back-end Developer

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### OBJECTIVE

Position as a lead or individual contributor with an excellent team, architecting and developing GUI, Windows, and back-end software in C++/Python/C#.

### EXPERTISE

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

### EXPERIENCE & AWARDS

- Microsoft MVP - Visual C++ (2007-2014)
- Nokia Certified Qt Developer (2009)
- Hands-on project management (2001-2004)
- Shipped popular apps including Logitech SetPoint, SanDisk U3, Borland C++, Turbo Pascal
- Created RegEditX, a PC utility Listed in WINDOWS Magazine's annual "100 Best Shareware Programs" and featured in Brian Livingston's INFOWORLD column.

### OTHER

- Favorite Tools – Visual Studio, Visual Studio Code, TortoiseGit, Total Commander, ManicTime, LINQPad, Process Explorer
- Code Repository – various code samples that can be made public
- GUI portfolio – screenshots of various projects
- American-born US Citizen

## EMPLOYMENT

**Rad AI** (6/20 – Present). Staff Engineer, lead of client team 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 artificially 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 new investment portfolio features to Advent Portfolio Exchange (APX), a huge 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 application where the user visually places graphical rectangles, denoting agricultural field plots, on high resolution aerial images and exports the plots' GPS locations to the open source QGIS application, for further analysis. Text labels are drawn next to the plots, and the plot rectangles can be rotated, sized, and moved as a unit. The scene containing the aerial image and overlaid rectangles can be zoomed in and out. Deep-dived into thorny issues such as 32-bit capacity limitations of QImage to support BigTiff files, as well as problems with rotating QPolygon and QRectangle in the proper coordinate systems. *Technologies:* Python, PyQt, PyCharm, QGIS.
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> **ERG** (11/12 – 12/17, 06/07 – 02/10). Worked with the COO to design, and individually implemented ERG Timecard, a web application for IT contractors to enter weekly timecards in a very simple way that reduces mistakes and encourages timely manager approval via e-mail, without needing to login. To further encourage good timecard workflow, the administrator can easily send individual reminder e-mails each week. Wrote a supplemental internal web application that provides the COO with deep visibility into the company's financials based on realtime contractor hours from the timecards. It also tracks the rate of contractor placements for account managers and recruiters on staff. Additional functionality warns the administrator to replenish purchase orders when the prepaid hours are running low. 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** (06/14– 12/15). Created prototype of Windows utility to mirror SQL Server transactions in realtime. Partially rewrote existing Intel Disk Cache configuration web app as a JavaScript SPA. *Technologies:* Qt, API Hooking, ASP.NET WebAPI, Named Pipes, Winsock, MS Message Analyzer, API Monitor, TDS, SweetScape 010 Editor (formats binary data), jQuery, AngularJS.

**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.

**MyBasis** (02/11 – 08/11). Enhanced Windows/Mac GUI utility collecting data from USB-connected smartwatch. Minimized crashes by optimizing buffering of the serial port buffers, but ultimately found the problem was a lack of flow-control. *Technologies:* C++, Qt, USB Serial Port, Mac PackageMaker, NSIS.

**Financial Statement Masters** (01/09 – 12/13). Implemented an Excel add-in for the creation of financial reports. *Technologies:* C#, WinForms, Office add-in, Add-In Express.

**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#.

**Cranite** (08/07 – 10/07). Created a Windows Control Panel for a wireless security software product, featuring an Office 2007 UI. *Technologies:* MFC, CodeJock UI library.

**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). Graduated Valedictorian (3.98/4.0 GPA) with **BS in Computer Engineering**.