

# DAVID CHING

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## SYSTEM SOFTWARE ENGINEER

Position as a lead or individual contributor with an excellent team, developing System software that works well, delights customers, and is simple to maintain. Experienced System Software Engineer with a strong background from OS internals to GUI, delivering complex, robust and scalable solutions.

## AREAS OF EXPERTISE

Operating System Internals | Python Programming | C++ Programming | C# Programming  
System Architecture | Debugging | Performance Optimization | GUI Software development | Installers and Deployment  
Driver development | AI

## TECHNICAL SKILLS

- **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/PySide/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.

## AWARDS

- Microsoft MVP - Visual C++ 2007 - 2014
- Nokia Certified Qt Developer 2009

## OTHER

- **Code Repository** (<https://bitbucket.com/dcsoft>) - public code.
- **Career portfolio** (<https://dcsoft.com/portfolio>) – Showcase of various career and personal projects.
- **Favorite Tools** - Visual Studio, JetBrains, TortoiseGit, Total Commander, LINQPad, SysInternals.

## PROFESSIONAL EXPERIENCE

**DC Software, San Ramon, CA – Fully Remote**

**November 2024 – Present**

**Owner**

- Gen AI Self study – Prompt engineering, local LLM's including DeepSeek, LangChain integration, RAG.
- Created open source [Python scripts to trade Schwab brokerage accounts](#).
- Added tracking of hires to ERG Timecard (see previous client "ERG", below) and helped IT dept. host on-prem server.

**Technologies:** .NET Web app | Python | Schwab API | LLM | Ollama | LangChain | RAG.

**Logitech, San Jose, CA – Fully Remote**

**October 2021 – March 2024**

**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.

- Represented the application team in global product meetings and conducted demos to the product bosses.
- Managed relationships with other teams across time zones (Chennai, EU, US) who helped with design and debugging the team's enhancements to the UI and backend.
- Resolved Windows INF incompatibility with device firmware, resulting in device reliably starting up when initially plugged in.
- Conceived and wrote internal utilities to manipulate JSON payloads to iteratively improve lighting effects used in G HUB.

**Technologies:** Visual C++ | React JS | Python | Firmware Interfacing | JSON parsing and manipulation | Windows Device Manager.

**Rad AI, Berkeley, CA – Fully Remote**

**June 2020 – September 2021**

**Staff Engineer**

Led offshore consultants to create and ship Omni Impressions, a Windows app that inserts AI-generated radiology impressions into reports being dictated into leading radiology apps (Nuance PowerScribe and M\*Modal Fluency).

- Selected and negotiated low initial cost to integrate DataDog logging service which helped to resolve hard-to-reproduce customer issues.
- Saved customer relationship by diagnosing and fixing catastrophic incompatibility with the customer's Windows environment.
- Utilized novel method of hooking the reporting software's windows to get and set text, resulting in the core functionality working with bulletproof compatibility.

**Technologies:** Windows Process Injection | Windows Hooks | C++ | C# | Internet Explorer Hooks | Log4Net Appender | WPF | Client Upgrader | WiX | DataDog | Sentry.

**SS&C / Advent, San Francisco, CA – Hybrid Remote****December 2018 – June 2020****Staff Engineer**

Worked with the principal architect to enhance the reporting and data transfer utilities within Advent Portfolio Exchange (APX), a portfolio accounting system used for large scale Assets Under Management (over \$2M).

- Enhanced the script language REPLANG, the data import/export applications, and completed proof of concept to refactor the scripting interpreter to repurpose the aging APX application.

**Technologies:** MS SQL Server | COM | ASP.NET | Infragistics | C++ | MSBuild | WinForms | Jenkins CI.

**Customer Lobby, Berkeley, CA – Hybrid Remote****June 2016 – December 2018****Senior Software Engineer**

Product owner of Direct Connect, a Windows app which retrieves data from hundreds of desktop invoicing systems, to drive direct mail campaigns. Responsible for all development and managed offshore contractor to reverse-engineer each invoicing system and generate appropriate SQL queries.

- Rewrote streaming data collection to be more performant, and fixed critical incompatibility with QuickBooks.
- Re-implemented Setup Wizard and Diagnostics UI, rewrote installer, maintained exception handling to the Sentry web service, and architected proper headless operation via Windows Task Scheduler.
- Prototyped Python rewrite using persistent websocket connections to Flask server.

**Technologies:** Python | 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.

**DC Software Design, Inc, San Ramon, CA****February 2010 – January 2018****Software Consultant for various clients including:****Eko Devices****June 2017 – January 2018**

Stabilized and enhanced a Windows application which controls a Bluetooth connected digital stethoscope, graphs audio waveforms, and transmits digital audio to a Web API.

**Technologies:** C#, WPF.

**John Deere (Blue River Technology)****January 2017 - June 2017**

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.

- Diagnosed QImage inability to support BigTiff files, as well as problems with rotating QPolygon in the proper coordinate systems.
- Delivered in time for critical usage in the field and provided well received documentation for handoff.

**Technologies:** Python | PyQt | PyCharm | QGIS.

**ERG****November 2012 - December 2017**

Designed and implemented ERG Timecard, a web application for IT contractors to enter weekly timecards correctly the first time and which encouraged their managers to approve them quickly without logging in by sending reminder e-mails.

- Wrote a reporting web application providing deep visibility into the company's financials and staff recruiting performance based on contractor hours reported in real-time from the timecards. Recommends refilling prepaid hours when needed. Interfaced with QuickBooks to generate invoices and receipts.
- ERG was acquired, and the top management is very keen to generalize use across all divisions nationwide.

**Technologies:** C# | ASP.NET MVC | WinForms | HTML5 | JavaScript | jQuery | SQL Server | Entity Framework | LINQ | QuickBooks SDK.

### **Salfeld Computer**

**August 2010 - December 2015**

Provided essential components of Salfeld Child Control, a Windows parental control app which blocks 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” and is one of the longest lasting technologies still in use.

- Created custom, high-performance client-side hash table for blacklisted urls.
- Altered Internet requests for compatibility with Google Safe Search.

**Technologies:** C++ | API Hooking | WinNet | ASP.NET Web Forms | ASP.NET MVC/ WebAPI | SQL Server | DDE.

### **GEO Semiconductor**

**June 2015 - August 2015**

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. The project’s UI was praised to be innovative and was documented so well with videos that the planned handoff meetings were cancelled.

**Technologies:** VC++ | GNU | Qt | Qt Creator | JSON | regular expressions | dynamic input validation | process launching and stdout redirection.

### **Trimble Navigation**

**December 2012 - May 2013**

Tuned simulation of agricultural controllers. Fixed race condition in core of simulation task switcher by re-implementing with Windows Fibers. The customer was “100% satisfied” with the result, finally enabling bulletproof use of the simulator.

**Technologies:** C++/MFC/Qt | Windows IPC | multi-threading | fibers | memory leak detection | Git | CVS.

### **Apple**

**October 2011 - July 2012**

Enhanced Windows version of Apple asynchronous library Grand Central Dispatch (GCD), used in iTunes for Windows. The work tuned GCD on Windows and enabled Apple to continue development of the library on newer versions of Visual Studio.

**Technologies:** C | threading | asynchronous I/O | cross-platform.

### **Cisco**

**February 2010 - August 2010**

Fixed critical bugs in 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, Los Altos, CA – Hybrid Remote**

#### **Senior Software Engineer**

**September 2008 - February 2010**

Designed utility to unlock, format, and configure IronKey secure flash drives. 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.

## **ADDITIONAL RELATED EXPERIENCE**

### **Logitech**

**Newark, CA**

#### **Senior Software Engineering Manager**

Architected and managed four developers to create **Logitech SetPoint**, a mouse and keyboard configuration app.

- Successfully overcame extreme time crunch to ship on-time with premium keyboard. The app was well received and then extended to serve as the only application for all Logitech mice and keyboards.
- Coordinated localization and marketing, and QA teams in EU and US.

## **EDUCATION**

### **Bachelor of Science (BS) in Computer Engineering (Valedictorian, 3.97 GPA)**

University of the Pacific, Stockton, CA