

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

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

Logitech, San Jose, CA

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

June 2020 – September 2021

Staff Engineer

Led offshore consultants to create and ship Omni Impressions, a Windows app that inserts generated AI 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 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

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 Assets Under Management (AUM) over \$2M.

- Enhanced the script language REPLANG and data import/export applications.
- Completed a proof of concept to refactor the scripting interpreter, the beginning of a multi-year effort to repurpose the aging APX application.

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

Customer Lobby, Berkeley, CA

June 2016 – December 2018

Senior Software Engineer

Product owner of Direct Connect, a Windows app which retrieves customer and transaction 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 WebAPI.

Technologies: C#, WPF.

John Deere (Blue River Technology)

January 2017 - June 2017

Wrote a cross platform 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 thorny issues such as 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 in a very simple way that reduced mistakes and encouraged their managers to approve them quickly. The administrator easily sends individual reminder e-mails as necessary.

- Wrote a supplemental internal web application that provides deep visibility into the company's financials based on real-time contractor hours from the timecards and advises timely replenishing of purchase orders when the prepaid hours are running low. It also showed the performance of account managers and recruiters who placed the contractors. A separate WinForms app interfaced with QuickBooks to generate invoices and receipts.
- The company was acquired and there is huge interest in utilizing this system's efficiency in all parts of the larger company.

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. 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.

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**Senior Software Engineer****September 2008 - February 2010**

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.

EDUCATION**Bachelor of Science (BS) in Computer Engineering**

University of the Pacific, Stockton, CA