

# James Craig Burley

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## Objective

Lead, Architect, Developer, and/or Management role (contract or full-time, remote/office mix preferred) involving design, implementation, deployment, and support of computing and/or avionics systems, including operating systems, developer/tester toolchains, and communications protocols.

## Profile

- Obtained Private Pilot's Certificate in April 2021; now pursuing Instrument rating, using mostly Garmin equipment and software (such as Garmin Pilot) on Diamond DA20's and DA40's.
- Enhancing [Joker](#) (a Clojure interpreter written in Go) to [automatically support/wrap](#) the [entire Go standard library](#) and, optionally, 3rd-party packages, among other substantial improvements.
- Primary architect/designer and project leader for various projects improving server availability, performance, and capacity at Bloomberg LP, via improved TCP and IPC utilization; Coverity, Purify, valgrind, and a custom fuzzer to validate code; and Splunk, profiling tools, and heatmaps to analyze effects and performance.
- Shepherded substantial portions of large-scale refactoring of Bloomberg LP systems-level run-time libraries (mostly written in C and C++) to improve packaging.
- As a consultant, drove lag time to port a code-generation module, in a Verilog compiler written in C, down from estimated 6 months to nearly nothing via partial automation coded in Lisp.
- Pioneered novel approach to writing test-automation infrastructure using reflection and other techniques while at Microsoft. Also served as Scrum Master.
- As a volunteer for the Free Software Foundation, wrote and maintained a widely-used GCC compiler front end (GNU Fortran, aka g77) and run-time library.
- As a Lead Technical Writer and Manager of Documentation for several years, supervised writers of highly technical manuals on computer operating and systems, while also authoring same; also designed, wrote, and maintained publishing software.

## Recent Systems and Programming Languages

- Unix, OS X, Windows
- Clojure, Go, C, C++, C#
- Networking protocols (such as SMTP)
- Shell programming and scripting (GNU Bash, PowerShell, Perl, GNU Emacs Lisp)
- Software-development/deployment technologies (Git, dpkg, Visual Studio)
- Network and system administration and maintenance (Splunk, Linux, Windows)

# Recent Experience

## **Bloomberg LP, [New York, NY](#)**

*Senior Software Architect, Systems Infrastructure, January 2012 — March 2017*

Architected, designed, debugged, and implemented core infrastructure protocols, communications software, libraries, and test-architecture infrastructure. Goals included: supporting more clients and client capabilities; reliable infrastructure; and improved developer workflows. Stack included proprietary multi-threaded applications (written in C, C++, and legacy Fortran) with heavy use of shared memory and related synchronization primitives, leveraging Git, Subversion, dpkg, Splunk, Coverity, Purify, valgrind, etc.

## **Microsoft Corporation, [Cambridge, MA](#)**

*Senior Software Developer in Test, [Application Virtualization](#), March 2008 — October 2010*

Architected, designed, and implemented Test Automation Infrastructure for Application Virtualization (App-V), focusing primarily on core virtualization components (such as Registry virtualization), by leveraging C# features, such as reflection, and WCF to easily create numerous effective, reliable, and easily-maintained automated tests to exercise the product during early development. Served as Scrum Master. Assessed and made recommendations concerning source-control and test-infrastructure systems under consideration for adoption.

Designed and implemented product-installation testability hooks (in C++) to enable fully-automated failure injection. Found numerous product bugs, including in late-cycle changes that would otherwise have delayed RTM dates, via code review.

## **[James Craig Burley, Software Craftsperson](#)**

### **Compiler/toolchain R&D, IT Support, and Training**

*Sole Proprietor, August 1989 — March 2008; October 2010 — December 2011*

Clients included [DRH Internet, Inc.](#), Dallas, TX (client support and software development); [Reflexion](#), Woburn, MA (SMTP server enhancements); [Cadence Design Systems](#), Chelmsford, MA (porting code-generation modules of NC-Verilog from native HP-PA RISC to SPARCv8); Archetype, Waltham, MA (page-layout software development and API documentation); [PictureTel](#), Peabody, MA (wrote high-level assembler for custom video processor); [Lehigh University](#) (added Interval Arithmetic support to g77, funded by [Sun Microsystems](#)).

## **Other**

- Various and sundry projects and contributions on [GitHub](#)
- [Software Architecture Fundamentals](#) training (May 2018)
- Approximately 10 years' experience with optimizing-compiler design and internals, run-time libraries, debuggers
- Over 5 years' experience with operating-system internals (kernel and filesystem)
- Over 5 years' experience as a technical writer, mostly in Lead and Manager roles
- Created companion videonotes on concurrency for "[Operating Systems: Internals and Design Principles, 8<sup>th</sup> Edition](#)" by William Stallings
- Nominated for the [Free Software Award](#) (1998 and 1999)