

Karl M. Davis

Software Engineer

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Happy little products. Happy little teams. Happy users.

Experience

2015–present **Associate Entrepreneur-in-Residence**, *Centers for Medicare & Medicaid Services (CMS)*.
Internal entrepreneur, architect, software developer, and technical lead helping launch APIs for CMS, the federal agency responsible for over \$700B of healthcare expenditures and over 3% of national GDP each year.

Specific responsibilities and accomplishments include:

- Leading the creation and launch of the open source Blue Button 2.0 API, which provides over 60M Medicare beneficiaries with the ability to send their data to the applications and services they choose.
- Leading development of the open source BFD Server, which provides many internal and external CMS services with FHIR-compliant API access to Medicare beneficiary and claims data.
- Leading development of the data pipelines that deliver the more than 10 TB of health data used by these APIs.
- Technologies used include: AWS (EC2, S3, and others), Java, Rust, Wildfly and JBoss, Docker, Terraform, Ansible, Jenkins, and unhealthy amounts of Bash.
- Assisted in the procurement/selection processes for several multimillion dollar contracts.
- Helping CMS participate in and coordinate with various industry standardization efforts.
- Helping lead and coordinate many separate CMS and contractor teams on all of the above, utilizing Agile and DevOps principles to deliver open source software and products that materially improve our nation's healthcare IT systems.

2009–2015 **Advisory Software Engineer**, *IBM*.

Led and participated in the development of many components of the COPLINK product suite, which was responsible for \$20M in revenue with over 20,000 state, local, and federal law enforcement users.

Specific responsibilities and accomplishments:

- Most development was in Java (J2EE) but I also heavily utilized all of the following languages and tools: JavaScript, Dojo Toolkit, Bash, Apache Maven, Apache Ant, and Jenkins.
- Development lead on a wide variety of components: Source Ingest API, XML Checker, Lookups Updater, COPLINK Source Extraction Engine, and Remote Administration Monitor.
- Produced statements of work, specifications, and oversaw the implementation of many custom development contracts for clients, such as: GUI customizations and a mobile field interview application.
- Worked onsite with the team in Tucson, AZ until 2013 and remotely afterwards.

- 2006–2009 **Principal Software Engineer**, *Ridgetop Group*, Tucson, AZ.
Managerial and technical lead for a small team of software engineers.
Specific responsibilities and accomplishments:
- Project lead for a \$1.2M Navy research & development grant to develop a software approach to reducing IT maintenance costs.
 - Wrote SNMP and WMI clients in Java that were used to remotely pull and analyze IT systems' current state.
 - Wrote a workstation data collection application and created a prototype sensor implementation for it (a handheld GPS unit).
 - Wrote numerous government R&D proposals, at least three of which were awarded grants.
- 2005–2006 **Software Engineer, Contractor**, *Vision7 Software*, Tucson, AZ.
Software engineer on over a dozen different projects. Programming languages and frameworks used included: C#, ASP.NET, ASP, VBScript, HTML, and CSS.
- 2002–2005 **Support Systems Analyst**, *University of Arizona*, Tucson, AZ.
Primary responsibilities were as a helpdesk technician. Also developed an account management tool using C# and ASP.NET that interacted with Microsoft Active Directory.

Presentations

- 2019-04 **Personal DevOps**, *DevOpsDays Baltimore*.
Principles and systems for personal workflow: <https://justdavis.com/karl/blog/2019/personal-devops>.
- 2018-03 **Elegant Weapons for a More Civilized Age**, *DevOpsDays Baltimore*.
Approaches to technology selection: https://youtu.be/f_hFnCl6o20.
- 2016-04 **Continuous Delivery with Java and Jenkins 2**, *Baltimore Java Meetup*.
How to use Jenkins 2 to build, test, and deploy a Java web application.

Languages

Java, *Expert*.

Java 1.4+: J2EE, Spring MVC, Wicket, Swing, Android, JPA, JDO, Hibernate, Spring, Guice, JUnit, and many other frameworks.

JavaScript, *Novice*.

Have done small amounts of jQuery and Dojo Toolkit coding, on various work and side projects.

.NET, *Former Expert*.

A long time ago, in a galaxy far, far away, I did a lot of work with C# and ASP.NET back in the .NET 1.0 & 2.0 days.

Others, *Novice*.

Have occasionally hacked on Ruby, Python, JavaScript, and PHP projects. Looking for a good excuse to use Rust on something...

Technical Proficiencies

IDEs Eclipse, NetBeans, and Visual Studio 2003 & 2005.

Dev IT Git, Mercurial, SVN, Maven 2, Hudson/Jenkins, Nexus, Eclipse RCP, and other tools.

- Systems IT
- Extensive experience building out solutions in AWS, using EC2, S3, and various other AWS services.
 - Have used several different configuration management tools, including Ansible, Puppet, and others, to create and maintain systems.
 - Have also setup and maintained Linux servers running DNS, Kerberos, LDAP, AFS, Zimbra, Postfix, Dovecot, and Apache.
 - Once upon a time, setup and maintained Windows servers using Active Directory, Group Policy, RRAS, DNS, DFS, and IIS.

Personal Coding Projects

All sorts of projects, ranging from silly to boringly practical: github.com/karlmdavis/.

Interests

Outdoors Canoeing, kayaking, hiking, and board games.

Indoors Small coding projects, reading, tinkering with IT, playing the occasional video game, and board games.

References

Available upon request.