

David McWhorter

Software Engineer



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About

Passionate creator of software that harnesses data to heal the world.

Experience

Premier, Inc. March 2015 - Present

Software Architect

<https://www.premierinc.com>

Premier is a healthcare informatics company where I create software to help hospital systems lower costs and improve outcomes of care.

Software Engineering

- Developing Service Line Analytics, an application for analyzing utilization and cost of surgical supplies and drugs as well as clinical outcomes.
- Developing Cohort Builder, an application allowing users to create patient cohorts for data analytics.
- Designing and implementing data ingest, transformation and indexing components.
- Designing and implementing user-facing web services and UI components.
- Designing and implementing data analytics components using appropriate algorithms and technologies.
- Designing and implementing infrastructure components including server administration and distributed computing frameworks.
- Building software tools that support our operations staff.

Technical Leadership

- Working to build and support an engaged, transparent, innovative and helpful engineering team culture.
- Supporting others on the team with technical input and direction on a daily basis.
- Asking pointed questions and contributing to discussions to clarify, challenge and refine product requirements and strategy.
- Providing critical but constructive feedback and contributions to other teams, staff members, and the broader organization.
- Promoted from Sr. Software Engineer to Staff Software Engineer, then again to Software Architect.

Data Science

- Contributing to the design and implementation of an on the fly retrospective pair-matched patient comparison tool to allow users to analyze the effect of a single variable on patient

outcomes while holding other variables nearly constant.

- Developing foundational components (e.g. cohort creation) of a larger data analytics framework.

Commonwealth Computer Research, Inc.

October 2008 - March 2015

Sr. Software Engineer

 <https://www.ccri.com>

CCRI is a data mining and predictive analytics company where I created software to predict crime and other events using geospatial and temporal predictors.

Software Engineering

- Developed operational and research software for the Army and Navy to model enemy learning using geospatial data to predict the time and location of future events.
- Designed and architected the Simple Warning Instant Forecasting Tool (SWIFT), a geospatial predictive analysis tool for small units with limited computing resources.
- Combined SWIFT with a similar application to form one predictive analysis platform capable of running in a multi-node cloud environment or single-node standalone environment.
- Designed, tested, and oversaw development of an Android-based mobile application.
- Contributed to GeoMesa, an open source spatio-temporal index for Accumulo.
- Developed a JavaScript-based user interface to present predictions to analysts.
- Extracted common methods and algorithms into internal libraries for use across projects.
- Setup and maintained infrastructure such as continuous integration servers.

Technical Leadership

- Oversaw a team of three to ten engineers using an agile sprint-based approach.
- Trained and developed engineers on my team.
- Delivered formal performance reviews.
- Interviewed full-time and internship applicants.
- Defined requirements with customers.
- Worked with internal projects to minimize overlap and align our vision.
- Wrote successful proposals for new contracts.
- Regularly demonstrated new capabilities at scheduled operational evaluations.
- Promoted from Software Engineer to Sr. Software Engineer.

Data Science

- Compared new predictive analysis techniques with standard libraries and internal algorithms.
- Utilized generalized linear models, random forests, and kernel density estimation.

Science Applications International Corporation

October 2007 - October 2008

Software Application Engineer

 <https://www.saic.com>

SAIC is a government contractor where I created software to securely and intuitively search textual reports.

- Designed and implemented text search tools.
- Improved a Microsoft .NET client interface for accessing search tools through web services.

- Adapted an existing application to a dual security domain environment, routing communication through a protected server and enabling queries using row level security.
- Designed and prototyped a search product combining functionality from three existing tools into one modular, extensible application.

Nonprofit Organization

August 2006 - August 2007

Regional I.T. Director and Web Developer

- Served as Regional I.T. Director during the six month absence of the permanent director.
- Led the installation, training, and auditing of security software.
- Developed a website for staff information and a web application for submitting reimbursements.

Image Matters, LLC

May 2004 - January 2005

Java Software Development Intern

📄 <https://www.imagemattersllc.com>

Education

University of Virginia

2001 - 2005

Bachelor's Degree

Computer Engineering and Computer Science

🎓 GPA: 3.76

Additional Courses

Statistics (Piedmont Virginia Community College, 2010)

Linear Statistical Models (University of Virginia, 2011, Unofficial Audit)

Functional Programming Principles in Scala (École Polytechnique Fédérale de Lausanne, 2012)

Principles of Reactive Programming (École Polytechnique Fédérale de Lausanne, 2013-2014)

Cloud Computing Applications (University of Illinois at Urbana-Champaign, 2015)

Projects

GeoMesa Contributions

📄 <https://github.com/locationtech/geomesa/commits?author=dmcwhorter>

GeoMesa is a spatio-temporal index for distributed databases



Undergraduate Thesis

📄 <https://www.mcwhorter.io/DavidMcWhorterThesis05.pdf>

Power Consumption Characterization of a Graphics Processing Unit



Professional Website & Resume

📄 <https://github.com/dmcwhorter/resume>

My professional website and resume built using open source packages



Spark Contributions



 <https://github.com/apache/spark/commits?author=dmcwhorter>

Apache Spark is a distributed computing platform

Skills

Programming Languages

Java Scala Groovy R JavaScript TypeScript HTML/CSS shell scripting
Python SQL

Java Technologies

DropWizard Spring Jackson Java EE/EJB JPA/Hibernate Akka JSP JBoss
Tomcat Jetty Android

Distributed Computing

Apache Spark Hadoop YARN/MapReduce Oozie Storm Kafka

Infrastructure

Apache Mesos Puppet Nginx Apache Kubernetes Docker Apache Airflow

Databases

MySQL PostgreSQL/PostGIS Oracle/Oracle Spatial Accumulo Impala Hive
Teradata Netezza

Web

React Bootstrap XML JSON REST/SOAP Web Services ExtJS OWL/RDF
JMS/ActiveMQ NetCDF

Geospatial

GeoTools/GeoServer OpenLayers Quantum GIS GDAL GeoMesa

Development Tools

Git JIRA/Confluence IntelliJ IDEA Netbeans Maven Subversion Ant Vim
VS Code

Languages

English Chinese
Native speaker Basic conversation

Interests

Running Electrical Wiring