Jordan I. Walker

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BACKGROUND

Computer Scientist with over **nine years** experience in full stack and **data science** development in environmental science applications. Specializes in the **agile** process of **planning**, **implementation**, and **delivery** of high quality software suited to the needs of the customer. Particularly familiar with the challenges of working with **data services** provided by numerous federal, state, and local agencies from both the experience as a **data provider** of such data as well as consumer of agency data. Brings together the traditional role of **software engineer** and nascent role of **data scientist** by bringing the solid **system-level** understanding of computer science to the practical **data-driven** analysis for problem solving in scientific fields that need both.

TECHNICAL SKILLS

Particularly skilled at learning additional languages and frameworks, below are skills I have to date:

- Proficient in **R** programming and the **Rstudio** environment for both package and script development.
- Proficient with R packages developed by USGS and EPA for **data discovery** and **data analysis** in order to **produce insights** based on these data.
- Experienced in visualization techniques in R, such as **base plotting** and **ggplot2** to aid in analysis and presentation of results.
- Proficient in **web application** programming across several languages, including **Java**, **Perl**, and **R/shiny**.
- Experience with R language **training**, having assisted in development of a curriculum and instruction for several **scientific computing** courses.
- Proficient with **Agile** methodologies for product delivery, including agile planning, iterative development, and continuous delivery.
- Proficient in version control, particularly **git** and **github**, for software as well as scientific workflows.
- Familiar with low-level languages like **C**, **C++**, and **FORTRAN**, particularly when it is useful to employ them for efficiency and performance.
- Experienced with relational database management using **SQL** and related technologies, including **hibernate**, **myBatis**, **liquibase**.
- Familiar with **python** as a scripting, analysis, and application language.
- Proficient in **Linux** server and desktop management, including **bash** scripting for everyday uses.
- Experienced with the client-side technologies of the web, **HTML5**, **javascript**, and **CSS**. This includes many common libraries and frameworks such as **jQuery**, **LESS**, **angularJS**, and **d3**.
- Familiar with **LaTeX** for typesetting and building attractive documents.
- Experienced in R packages within the tidyverse, especially **dplyr**, **tidyr**, and **readr**.
- Proficient working with scientific data file types, services, and encodings, including **NetCDF**, **OPeNDAP**, **RDB** and **WaterML2**.
- Proficient in automated testing tools in several languages, particularly **JUnit** in Java and **testthat** in R.
- Experienced in formal dependency management solutions in several languages, starting with **maven** within the JVM ecosystem and extending to the different options built around **CRAN** within R.

- Proficient in project management following Agile practices, examples include **planning poker** for release planning, **SCRUM** and **kanban** for iteration planning and execution, and **retrospectives** for continuous process improvement.
- Experienced with **devops** tools and principles as a way of extending development further towards the infrastructure and production environment.

PROFESSIONAL EXPERIENCE

Computer Scientist — June 2010 - Sep 2017
U.S. Geological Survey — Middleton, WI

Worked on a software engineering team developing services for USGS Water data, followed by a transition to a newly established Data Science team. Played a lead role in many projects as well as a supporting role in many others.

- Member of Water Mission Area **data science team** focused on developing **tools**, **training** in scientific computing, performing **research**, and communicating science with compelling **visualizations**.
- Helped develop **dataRetrieval** R package, supporting data access of **USGS**, **EPA**, and other partners data.
- Developed Java-based **Geo Data Portal** for accessing USGS **downscaled climate data**.
- Worked closely with domain experts to assist in several areas of Water science (**surface water**, **groundwater**, **water quality**, and **water use**).
- Architect and supporting developer of **geoknife** R package for accessing the Geo Data Portal.
- Project lead on USGS **Visualization Laboratory** and the accompany **vizlab** R package.
- Worked on several projects using vizlab, dataRetrieval and geoknife packages to produce **visualizations** for the general public.
- Researched and implemented applications using domain specific software (THREDDS, geoserver, 52 North WPS).
- Designed services and clients supporting **open standard** data exchange (WFS, WMS, CSW, SOS, OPeNDAP).
- Co-created web portal for **Coastal Change Hazards Portal** assessing risk of the nation's coast to different hazards such as storms and sea-level rise.
- Created web user interfaces using JavaScript and well known libraries and frameworks (jQuery, angular, openlayers).
- Worked in a team environment using **Agile practices** for planning, implementation, and delivery.

Student Programmer — Feb 2007 - May 2010
University of Wisconsin Space Science Data Center — Madison, WI

Student programmer to the data center operations staff. Tasked with a variety of programming tasks to make operations more efficient. Worked closely with staff to define requirements of scripts and dashboards that were developed.

- Supported operation of **600 Terabyte** datacenter.
- Developed web applications **dashboards** for quality control of incoming satellite data.
- Created scripts for application and system **monitoring** for operational systems.
- Wrote and updated programs working with several **mySQL** databases with metadata about datacenter contents.
- Developed Java code for NASA Atmosphere PEATE project including **data ingestion**.
- Programming languages used were **Perl**, **python**, **Java**, and **PHP** along with some web programming in HTML, JavaScript and CSS.

SELECTED PUBLICATIONS

- *Smartphone-Based Distributed Data Collection Enables Rapid Assessment of Shorebird Habitat Suitability.* Thieler, E. Robert; Zeigler, Sara; Winslow, Luke; Hines, Megan; Read, Jordan; Walker, Jordan. PLoS ONE, 2016.
- *geoknife: Reproducible web-processing of large gridded datasets.* Read, Jordan; Walker, Jordan; Appling, Alison; Blodgett, David; Read, Emily; Winslow, Luke. Ecography, 2015.
- *Description of the US Geological Survey Geo Data Portal Data Integration Framework.* Blodgett, David; Booth, Nathaniel; Kunicki, Tom; Walker, Jordan; Lucido, Jessica. IEEE, 2012.
- *A system for audio signalling based NAT traversal.* Patro, Ashish; Ma, Yadi; Panahi, Fatemeh; Walker, Jordan; Banerjee, Suman. COMSNETS IEEE, 2011.
- *Continuous Monitoring of Wide-area Wireless Networks: Data Collection and Visualization.* Ormont, Justin; Walker, Jordan; Banerjee, Suman. Sigmetrics Performance Evaluation Review, 2008.
- *A City-wide Vehicular Testbed for Wide-area Wireless Experimentation.* Ormont, Justin; Walker, Jordan; Banerjee, Suman; Sridharan, Ashwin; Seshadri, Mukund; Machiraju, Sridhar. WiNTECH, 2008.

EDUCATION

MS, Computer Science
University of Wisconsin-Madison – Madison, WI
May 2010, GPA 3.75/4.0

BS, Computer Science
University of Wisconsin-Madison – Madison, WI
Graduated with Honors, May 2008, GPA 3.623/4.0