William P. Kahley
301-814-1066 (mobile)
William.P.Kahley@gmail.com

Experience Summary:

Experience with all phases of software development lifecycle; Requirements Capture/Analysis, Enterprise Solution Architectures, Object-Oriented Design & Implementation, SWIT, Maintenance, Documentation.

Design Patterns:	Java OO Design, Java EE Patterns, UML Diagrams (Sequence, Class, Data Flow)
Java SE / Java EE:	1.4, 5, 6, 7, 8, 9
Spring 3,4: Spring 5: Spring Boot 2:	Core, MVC, Security REST, WebSockets, Reactive Modules (spring-webflux, spring-web-reactive, reactor-core) Spring Boot Initializr (spring-boot-starter-* Data JDBC, JPA, REST, WEB)
GeoSpatial Related:	GeoTools (gt-main, gt-referencing, gt-opengis,gt-api), REST WFS/WMS GetMap(Layers,Styles,Bbox), GeoServer
Database Related:	JPA/ Hibernate, JDBC, SQL, Oracle 11g/ 10g/ 9i, PostgreSQL 12
Web Services Related:	JavaScript (JQuery, OpenLayers), HTML, CSS, JSTL, JSP, Firebug Debug; Tomcat, JBoss/WildFly
Integrated Dev Env:	Eclipse, SpringSource Tool Suite, IntelliJ
Linux OS:	Shell Commands, Shell Scripts, Env Variables, Utilities
Config Management:	Maven, Git (Git Cmd Line, TortoiseGit, GitHub), JIRA, Subversion, Rational Team Concert
CI/CD Tools:	GitLab, Docker, Nexus, Jenkins
Management Process:	Agile, SAFe

Experience:

Northrop Grumman 08/2015 – Present

Project JOMIS (Joint Operational Medical Information Systems) 09/2019 -
Domain: Joint military situational awareness of, condition and medical attention status of military personnel. IR&D proof-of-concept
Role: Software Engineer/Developer Java; Implemented REST APIs, enabling application UI to access a PostgreSQL database.

Responsibility for requirements, solution options. Development included use of Spring Boot Initializr (create Spring Boot project), and Eclipse Dali JPA Tools (create JPA Entity classes). Required working understanding of CI/CD Pipeline tools: ❖ Involvement with initial configuration/integration, ❖ Developer daily use of Jira, Maven, GitLab, Nexus, Docker, Jenkins.

Agile/SAFe: Participated in sprint planning, daily scrums, retrospectives, sprint demos, two-week sprint cadence.

Dev Environment, Tools:
❖ Java 8, Spring 5, Spring Boot 2 (spring-boot-starter- Data, JPA, REST) ❖ Eclipse, Maven, Git
❖ Docker (Dockerfile, Docker command line) ❖ PostgreSQL (Docker Hub image, SQL, pgAdmin)

Project IDENT (FABRIC) 01/2019 - 08/2019
Domain: Law Enforcement ID Systems
UK Law Enforcement fingerprint acquisition, management, search; comprised of a large number of distributed systems.
Role: Software Engineer/Developer Java;
Enhancements to existing functionality, and maintenance of many subsystems associated with very complicated workflows.

Responsibility (shared with dev lead) to enhance message processing functionality, by Java implementation changes to enable processing messages of a new format; given customer updated version of XSD files, and examples of XML message files in new format. Required updates to XML Schema files, and static Java code base analysis in order to find impacted Java code, make necessary code modifications (JAXB API), and some changes to Java class design patterns.

Application Java code defect resolutions. Required becoming very familiar with using Linux shell commands, and Command Line SQL (SQLPlus) for understanding Oracle DB tables and relevant data to verify resolutions.

Dev Environment, Tools:
❖ All activities performed on Linux (CentOS). ❖ Linux Shell Commands/Scripts, Env Variables, Utilities.
❖ Maven (jaxb2-maven-plugin, XJC JAXB Binding compiler). ❖ Ant builds, Maven builds. ❖ Eclipse setup remote debugging.

William P. Kahley
301-814-1066 (mobile)
William.P.Kahley@gmail.com

Project **Dynamic Air C2 Management (DACM) IR&D** 01/2017 – 12/2018

Domain: Air Force operations Command & Control, Unmanned Air Systems (UAS) Reconnaissance Missions Planning IR&D
Role: Software Engineer/Developer Java; Responsibility for translating requirements to design, implementation.

Designed, Implemented Spring REST Service
CRUD Service which enables client systems to request streaming of tracking data representing entities within a specified region.
Designed, Implemented Spring Reactive WebSocket Service
Required becoming familiar with Spring Reactive programming with Spring modules (spring-webflux, spring-web-reactive, reactor-core), Lambda Functional programming, Spring Boot, embedded Tomcat. Google Protobuf for serializing, streaming of XML data messages.

Tracking Data Ingest
Given interface definition, then implemented capability to parse and translate periodic binary data blocks to populate Java structures.

Geospatial Functionality - Algorithms Design & Implementation
Involved requirements related to (UAS) assets, and periodic tracking data (position, kinematics) of other entities.
Implemented functionality using GeoTools Java libraries (gt-main, gt-referencing, gt-opengis, gt-api).
Geospatial Functionality – Testing of Reliability of Algorithms
Used Google Earth to import tracking data points of; reconn assets, and 240 entities (600 time points).
Was able to determine that the geospatial algorithms design & implementation was reliable.

Agile: Participated in scrums, sprint planning, two-week sprint cadence.

Dev Environment, Tools:
❖ Java 9, JUnit, Mockito ❖ Spring 5, Spring Boot 2 (spring-boot-starter- Data, JPA, REST) ❖ Eclipse, Maven, Git, XsdJavaDoc.

Project **Pyramid FTTY Database Applications** 06/2016 – 12/2016

Domain: During fabrication of components (microelectronic chips, Radar waveguides, etc), Quality Control conducts testing of all parts in order to determine acceptance/rejection. All of the metrics are entered into systems which in turn is forwarded to large Oracle databases.
Role: Software Developer (IWO Temp Assignment)
Reverse Engineered existing database application; Reads from Oracle (data acquired during fabrication), writes to Excel Workbook sheets.
MS Excel Workbook sheets linked to MS Access tables <-- MS Access tables linked to Oracle tables <-- Oracle tables

Analysis of Oracle Tables: ER Diagrams, SQLDeveloper used for analysis of tables, data, T-SQL Selects.
Analysis of SQL: Selects involving deep nested joins.
Software Defects Resolution: Determined root cause, Resolved numerous run time issues.

Dev Environment, Tools:
Required first time learning to use: ❖ MS Access IDE ❖ MS Excel IDE ❖ VBA code modifications.

Project **FAA Aeronautical Information Management Modernization S2** 08/2015 – 06/2016

Domain: Air Traffic Control situational awareness of airport and air traffic.
Aeronautical data (XML messages from numerous sources) ingest, transform, store to Oracle (Spatial Data). Data accessed by consumer systems REST/SOAP requests for ingested data via; Web Mapping Service (WMS), Web Feature Service (WFS).
Role: Software Engineer/Developer Java;
GeoServer Enhanced Capability Implementation**:** Responsibility (shared with two others); for enabling temporal FES filter parameters (GML, AIXM) to the web service requests (WMS, WFS). Required understanding of; GeoServer configuration, data necessary for Web Feature Service (WFS) Requests (i.e., GetCapabilities, GetFeature), and associated spatial / temporal FES filter parameters (GML, AIXM). Understanding of REST Web Mapping Service (WMS) Requests (i.e., GetMap (Layers, Styles, CRS, Bbox, ...)), and filter parameters.

GeoServer Migration**:** Responsible for migration From installed application To GeoServer WAR Deployed on JBoss.

Deployment To Integration Environment**:** Responsible for First install/setup/configuration of GeoServer, JBoss on CentOS 7 Linux.

Development Testing Enhanced Web Feature Service (WFS)**:** Conducted Testing, Compiled Documentation of Test Cases.

Requirements Analysis Enhanced Web Mapping Service (WMS)**:** Terminology Intensive, Geospatial Information Systems GIS Concepts.

Client Prototyping Web Mapping Service (WMS)**:** Researched, Prototyped, Recommended options for;
❖ WMS REST Client: JavaScript (OpenLayers, ExtJS) ❖ WMS SOAP Client: JavaScript (soapwms.js, JQuery.soap)

Dev Environment, Tools:
❖ GeoServer setup, configuration, image data files.
❖ GeoServer ❖ Eclipse ❖ JBoss EAP ❖ SoapUI ❖ Oracle ❖ SQLDeveloper ❖ CentOS 7 Linux (UNIX Shell commands, scripts)

William P. Kahley
301-814-1066 (mobile)
William.P.Kahley@gmail.com

Vigintis 06/2015 – 08/2015

Project RTM Enterprise Web Application 06/2015 – 08/2015
Domain: US Air Force Intel; Operations & Maintenance of systems used for ordering, tracking of aerial imagery.
Role: Software Developer Java (Contracted to General Dynamics)
Application Java code defect resolutions associated with backend implementation;

Business Rules: analysis/debugging of Java coded business logic in connection with workflow state engine.

Data Access: modifications to Hibernate Criteria Java code, to reflect Oracle table modifications.

Database (Oracle 11g): used SQLDeveloper and command line SQL (SQLPlus) for analysis of existing database structure.

Dev Environment, Tools:
❖ Eclipse (Maven, Subclipse) ❖ Subversion (TortoiseSVN) ❖ JBoss EAP Server ❖ SQLDeveloper

CSRA 09/2014 – 05/2015

Project Civil & Health Services/ Electronic Biomedical Research Application Portal (EBRAP)
Domain: Enterprise Web Application used by medical researchers for identifying funding opportunities, and creating/tracking applications and creating/tracking applications for research funding.
Role: Software Engineer/Developer Java; Responsibility for coordinating with team of three other developers for enhancements to existing backend functionality, during complete redesign/reimplementation of Java systems/segments, and Oracle Database structure.

Spring MVC**:** Contollers/ RequestMappings, Models/ ModelMaps/ CommandObjects

Business Tier: Business Delegate / Session Facade Layer; Business Managers (Spring Beans `@Service`)

Data Persistence**:** Spring / JPA/ Hibernate

Database (Oracle XE 11g):
❖ Used SQLDeveloper and command line SQL for analysis of existing database structure.
❖ Created/Altered database tables, modified existing data in order to populate new/modified tables.

Responsibility for assigned User Interface screens; Created, Enhanced, Resolved Defects.
Required good working understanding of implementation involving (JavaScript, HTML, CSS, JSTL, Spring Tags, JSP).

Agile: Participated in daily scrums, sprint planning, two-week sprint cadence.

Dev Environment, Tools:
❖ Eclipse ❖ Tomcat 7 ❖ Oracle XE 11g ❖ SQLDeveloper

Engility 01/2014 – 08/2014

Project Veterans Benefits Management System (VBMS)
Domain: Veterans medical claims systems; Used for claims creation, process tracking (medical exames, therapies, payments, etc).
Role: Software Engineer/Developer Java;

Backend Defect Resolutions involved good working understanding of
- ❖ Requirements refinement, High Level Design; analysis of all Tiers/Layers of VBMS (Spring, Spring MVC, DAL, Services)
- ❖ Gained proficiency using of Development Environment (IntelliJ IDE, Maven) for doing Java development.
- ❖ Analysis of Java Design & Implementation of existing functionality of VBMS system.
- ❖ Writing Unit Tests (JUnit, JMock, JaCoCo) for Data Access Layer (JPA/ Hibernate, DAOImpls, Entities, Model classes)

User Interface Defect Resolutions involved good working understanding of GUI Design & Implementation
- ❖ HTML, JSP, JavaScript / JQuery --> AJAX --> Spring MVC Controllers
- ❖ Mozilla Firebug for debugging of Javascript / JQuery code
- ❖ JQuery (tablescroll.js, dataTables.js, multiselect.js)

Agile: Participated in daily scrums, sprint planning, two-week sprint cadence; Continuous Integration (CI)

US Budget Sequestration 2013 → Employment Gap 02/2013 – 12/2013

Other agency (Langley) funding reductions → Lockheed Martin Reduction In Force Policy → LM Layoffs
Continued to apply, interview for positions requiring Other clearance (TS/SCI/Poly).
Acquired 9 letters of offer (Contingent upon customer lifting freeze). Details Available Upon Request

William P. Kahley
301-814-1066 (mobile)
William.P.Kahley@gmail.com

Lockheed Martin **02/1996 – 01/2013**

Project REDACTED 09/2010 – 01/2013
Role: Software Engineer/Developer Java
Designed, Implemented Java Messaging Service (JMS) Infrastructure 22 month
Integrated into an existing software architecture; Enabling High Availability and Load Balancing enhancement to existing subsystems,

Requirements Capture, Analysis, Definition: Participated very actively in many internal meetings Systems/Software Engineers, and customer Systems Engineers, in order to evolve/refine our collective understanding of customer IT requirements.

Solution Architecture Decisions: Researched large volume of Design & Implementation sources enabling good choice of solution components/ frameworks as a foundation on which to implement the required functionality (Apache Camel, ActiveMQ, Spring Framework).

Design Decisions: Apache Camel Framework implementation of message channels, between the FTP Servers and JMS brokers. Clustered JMS Brokers configuration, enabling High Availability and Load Balancing.

Oracle Clusterware Evaluation: Required becoming Sys Admin and DB Admin for three servers. 2 month

Dev Environment, Tools:
❖ Eclipse IDE, Spring Tool Suite IDE ❖ JUnit, Log4j ❖ JConsole ❖ Subversion ❖ JIRA ❖ Apache Camel, Apache ActiveMQ, Spring

Project GeoScout / PMAA 06/2008 – 08/2010
Domain: NGA National GeoSpatial Intel Agency; Operations & Maintenance of PMAA used for ordering, tracking of aerial imagery.
Role: Software Engineer/Developer Java;
Resolved code defects by determining problem root causes, implemented and tested code changes.
(Java , Struts, JSPs / HttpServlets, JMS / EJB / MessageDrivenBeans, Javascript, JBoss, Eclipse IDE, soapUI)

Program IEC (Imagery Exploitation Capability) 02/2003 - 05/2008

Project IEC/ VDM SitesStatusMonitor 12 month
Role: Software Engineer/Developer;
Designed, Implemented a web-based application, used for monitoring the status of IEC sub-systems in the operational environment.
❖ (Java, JSPs, HttpServlets, SQL, JDBC, XMLBeans, XML, Tomcat, Eclipse IDE) ❖ Perl scripts ❖ Oracle 9i

Project IEC/ Throughput Monitor 9 month
Role: Software Engineer/Developer;
Designed, Implemented; a web-based application, used for monitoring performance of IEC sub-systems in the operational environment.
❖ (Java, JSPs, HttpServlets, SQL, JDBC, XMLBeans, XML, Tomcat, Eclipse IDE) ❖ Perl scripts ❖ Oracle 9i

Project IEC/ Performance Monitoring NLIPP, MLIPP 18 month
Role: Software Engineer/Developer;
Complete re-write of two large Perl applications used for IEC sub-systems code performance profiling, based on parsing of log file content.
(Perl, RegEx syntax intensive, PTKDB debugger)

Project IEC/ Performance Monitoring UNIX Shell Scripts 3 month
Role: Software Engineer/Developer;
Write, Re-Write Korn Shell scripts (cat, grep, awk)
Used for IEC sub-systems code performance profiling.

Project IEC/ PKI Admin 3 month
Role: Software Engineer/Developer

02/1996 - 01/2003

Project NASA / Vision 2000 / Control Center System 15 month
Project NASA / NOAA / GOES Satelite Data Archive Project 13 month
Project MSAS Program / Service Level Display (SLD) Project 11 month
Project GOSC Program / Estimation Team 18 month
Project Database Migration Proof of Concept 15 month

Education: Bachelor of Science in Electrical Engineering, The Pennsylvania State University

William P. Kahley
301-814-1066 (mobile)
William.P.Kahley@gmail.com

Learning Experience

This is an outline of the disciplined self-study efforts that I have engaged in recently; approximately 30 hr/wk X 28 wk (As of year's end 2020).

Online:

Amazon Web Services
• AWS Technical Professional click 2020/04

Skillport
• Python for Data Science: Introduction to Pandas 2020/05
• Data Science Statistics: Applied Inferential Statistics 2020/05

Udemy
• Machine Learning A-Z: Hands-On Python & R in Data Science click 2020/07

Desktop Computing: Windows Python, R

Python (Anaconda) 2020/07,08 - >
Data manipulation, analysis, modeling, visualization; with JupyterLab IDE, Jupyter Notebooks.
• Python scripting
• Python Libraries: NumPy, SciPy, Pandas, SciKit-Learn, StatsModels, MatPlotLib
• Spyder, PyCharm
• JupyterLab, Jupyter Notebooks

R (Bioconductor) 2020/09,10 - >
Initial learning experience on Windows, with efforts continuing on AWS Cloud.
• R scripting
• R Packages: Tidyverse
• RStudio
• Access/Download from Open Genomic Data repositories

Amazon Web Services (AWS): Linux R 2020/12 - >

AWS Services Identified, Explored, Studied click
• EC2 AMIs:
  - AMIs (Image Instance Types, Configuring Security Groups, Key Pairs, IAM Roles).
  - EBS-backed AMIs (Snapshots/incremental backups of EBS volumes, Root Device volume).
  - Data Storage (Create S3 Bucket, Import from Open Data S3 Buckets, Input data to Dev environment, Storing data in S3 Bucket).
  - Shared AMIs
• EC2 Image Builder: Service enables custom image builds
• EC2 Container Service (ECS): Service supports Docker containers
• Elastic Container Registry (ECR): Docker container registry service
AWS Bioinformatics click
AWS Documentation click

Bioinformatics Online Study Resources:

Familiarity of 2020/09
Concepts, Terminology of Molecular Biology, Genetics click
Genomic Sequencing Technologies click

Knowledge of 2020/09,10,11
Data Analysis, Modeling, Visualization (Algorithms) click
Data Analysis, Modeling, Visualization (Python, JupyterLab, Jupyter Notebooks) click
Data Analysis, Modeling, Visualization (R, RStudio) click
Data Analysis, Modeling, Visualization (Bioconductor) click
Data Analysis, Modeling, Visualization (Software Tools Overview) click
Data Resources, Viewers click

Special study of 2020/09,10,11
NGS RNA-Seq: related data files formats, pre-processing (FASTQ BAM VCF)
NGS RNA-Seq: expression analysis, differential expression analysis click
Genomics cross-study analysis, data integration, exploratory data analysis, data mining click

Bioinformatics Projects
Project Ideas click
Project 1

Open Access Journals click