

Author Author Author - Pythology San Leandro, CA Development Project Experience: Architecture, Engineering and . Experience organizing and dealing with complex projects: Experienced Data Engineer: ETLs, Analytics, SQL, Spark/EMR, ML. Software Engineer: A) Performance, optimization, and scalability. B) Security: OWASP, Network Analysis, Monitoring. Scientific, engineering, financial, statistical, apps experience. Web and Enterprise software developer, architect: Experience with Java/JEE, Python/Django/Flask, C/C++ JavaScript, SQL, NonSQL. Project, Management, and Tech Lead experience Experience with Scrum, sprints, agile development TDD, GIT code reviews, refactoring, products via design, proof-of-concept Software architecture and project planning for SAAS, SOA, API. Project management experience: Supervised 3 to 7 developers. Experienced with budget proposals, standards. performance review, hiring, cost/benefit, RFPs, financials, forecasting, facilitation Experience by Summary by Industry, and Role Type (full chronology also available). Software Education, Learning Work Experience Author Pythology September 2008 to Present Working on 2 volume book set on Python and Applications "Mastering the Art of Python" Volume 1 includes Basic structures, FP, OOP, Design, Design Patterns, Installation and expansion, IDEs, Jupyter, Volume 2 includes Data Engineering with Spark, and Spark add-ons: and Web Development, Algorithms and Structures, Web Top, Data Engineering, AI, ML, DL Environment: Flask, SQL Alchemy, Spark, Java, Database, TLA+, Spark, PySpark, Dask, Pandas, Modin (RiseLab), GIT, Markdown, Jupyter, Eclipse, PyDev Data Engineer Autodesk September 2018 to April 2019 Spark/EMR: Designed0 KPI graphics Google Charts. Built ETL, PySpark, Python 3.6, AWS, S3,, Aurora, Built back- end query grouper for reporting, SQL Alchemy, Boto 3, Chalice, Docker. Senior Data Engineer Autodesk September 2018 to April 2019 Python, PySpark, EMR Design and implement ETL application for Key Performance Indicator (KPI) using Google Charts for ECCR PHP Dashboard: AWS EMR, Spark/PySpark, using Aurora Bulk-load and JDBC, Design implement Query Grouping for User Subscription and Pay-Per-Use Account Product Usage: Python 3.6, SQL Alchemy, MySQL. Build Deployment in Docker. Test and Upgrade ECCR to new Pylint Build TDD Unit Tests and Continuous Integration Tests: Jenkins, Unit Test Environment: Python 3.6, AWS, Docker, EMR, Spark/PySpark, Spark 2.4., Java 8,

SparkSQL, Spark-JDBC, S3, Parquet, Aurora, MySQL, EC2, Google Charts, Bullhead, Boto3, SQL Alchemy, MySQL, Aurora, MagicMock, Patch, Jupyter, Eclipse, PyDev, Visual Code, Comp Sci. Author Pythology May 2018 to May 2018 present writing: Mastering the Art of Python OOP, FP, Design Patterns, Web, ETL, Analytics PySpark, TDD. Infrastructure Developer Stanford University November 2017 to April 2018 Email intercept to handle Alerts. Python 2.7, MongoDB. AWS Solutions Arch. Cert. Senior Software Engineer Stanford University November 2017 to April 2018 Python. Design and implement Email Alert processing system by converting existing Perl program to Python. ? Email program is both Python 3.6 and 2.7 compatible. It used a number of conversion capabilities based on the Email, BeautifulSoup and other data conversion systems. ? The original Perl used Regex extensively and also lacked a menu-driven method to identify types of email. I wrote special Regex functions that returned multiple values so as to modularize and I used a Dict with else to create a proper menu. ? Output json to MongoDB ? Testing using nose, pytest. ? Document the conversion in detail on Git using Sphinx. Maintain and enhance the original Perl 5 system on Debian. In addition to converting the program I also learned the Perl language and maintained the program, Environment: Debian Linux, bastion host, Python 2.7, Python 3.6, Perl 5, Sphinx, Email, Pip, nose, pylint, flake8, mongo, json, click, MongoDB, AWS. Sr. Software Engineer University of California, Berkeley - Berkeley, CA January 2009 to July 2017 Chancellors Award as lead developer on Quali Ready Continuity Planning, used by 80 universities (GWT-JEE). Developer: Cal REST Security APIs, CMS (JEE, Lucene, JMS); Schedule Builder Python Developer (aka Ninja) used by 20,000 students (Python 2.6, Django, ORM, JS, JQuery). Traffic Study, Spark. Banking, Financial Insurance Senior Application Programmer University of California, Berkeley - Berkeley, CA January 2009 to June 2017 Team Leader. Design and implement administrative and student applications: I was awarded the Chancellor's Award, UCOP Sautter Award Data Engineer and Team member on PySpark Traffic Study along other members of Brian Petersons team. We set up extracted a data pipeline to extract State of California PEM data to analyze traffic flow using ML algorithms: Random Forest, using Spark, under Databricks with Pandas and using Keras. Tech Team Lead for design phase, Curriculum Management System (CMI/CMS) Management

presentation to Kuali Consortium GWT/Java JavaScript Tech Lead on Django/Python JQuery/JavaScript (5 years) Integration, Django ORM, PostgreSQL, The application called Schedule Builder was used by 20,000 students. ? Install on scaled load balanced servers, single-sign-on. Apache Mod_Wsgi, MemCached ? Fix and document Scheduling algorithm was very rapid despite being written in Python. ? Consult with Research IT and CS AmpLab on C-based algorithm compiler they used. Data Engineer: Admissions JEE PATH Application: XML -XSL/JEE Hibernate Integration API Central: Software Engineer: Developed Proof-of-concept for Rest API and security integration, SSL, using Felix ESB OSGi Message process integration Tech Team Lead: Kuali Ready Continuity Planning a multi-level security and multi-tenant SAAS Web application written in JEE, GWT and Struts 2, JPA Hybernate using Spring framework. Developer on on MyFinAid, Emergency Loans and Shopping Sheet in GWT-JEE-JBoss and open source Kuali JEE stack. Construct UIs using GWT 2.0 UI Binder and GWT ExtJS. Build services using Spring, Spring Security, CAS. Team lead and designer for Course Managemen Set up IT Red Hat systems, Hudson/Nexus continuous integration and Dev, QA, and Production environments. Participate in Employee Engagement Planning group for Student Affairs Created Actor Prototypes in AKKA Scala and gave class to department on message processing. Team lead on Application Security Review Team: Perform network reviews on Level 2 Applications for SAIT and Student Course Recommendation System. Set up logging analysis using Spark. . Consult with team. Advise on use of Helio secure role-based Spark SQL query system designed by EECS, AmpLab. Courses taken while at UC Berkeley: ? Spark and Machine Learning, UC Berkeley Extension: ? Artificial Intelligence, Stanford (online). ? Python Boot Camp ? SANS 522 Application Security: Berkeley IS&T ? OWASP Defending Applications: SAIT ? ITIL Training: SAIT Courses taught: ? Actors in Scala: IS&T Environments: JEE, Java 6, 7, 8. 9, GWT, Spring Framework, Spring Security, Spring Java Database/JDBC, Spring Boot, Lucene, Jenkins, Hudson, Nexus, Jasper, CAS, Shibboleth, Tomcat, SOA Workflow, Scala, Python, Django, Memcache, Oracle, Spark, PySpark, PostgreSQL, Maven, IntelliJ, Rake, Maven, Jenkins, Nexus, Mac OS.X, Anaconda, Jupyter, Spark, PySpark, Pandas, Numpy, Numba, Matplotlib, Bokeh, DB-API, psycopg2, Virtual Box, Vagrant, Windows,

Ubuntu, CENT OS Redhat, PeopleSoft. ISG Alerts Platform Senior Software Engineer Wells Fargo - San Francisco, CA November 2006 to September 2008 Wells Fargo Alerts Team. Worked in Wells Fargo SOA financial service system environment. Tech Lead, Architect and Developer on Alerts, on interactive SOA integration projects and and Customer Notification Authoring System. Design and implement solutions for parallel processing server for scalable, high- performance environment with Web and JMS architecture using Spring, Oracle Design code and implement new expanded domain model and processing system to lower the cost of service alerts: Develop a User tool (Julius) that enables design of customized content for customer banking messages. Ajax, Velocity, Spring. Hibernate and patterns. JMS, WebLogic, MQI, Oracle with Test Driven Development. Security: architectural and engineering work to identify and resolve Web and e-mail security issues using Fortify. Work on 2FA, DKIM issues with the business. Develop domain object, model, and business use cases. Create maintain database model. Coordinate work with long-range planning team at corporate. Coordinate work between Alerts Team and other development teams. Courses taken: ? Test Driven Development ? Fortify Environment: WebLogic 8.1, 9.0, WebSphere MQ/MQI, J2EE, JMS, Spring, Hibernate, Oracle 10i, Toad, Web services, Hermes, MQJ-Explorer, JUnit, Solaris Unix, MyEclipse, Ant, Sparx Enterprise Architect, Toad, ERWin, JDK 1.4, 5. Senior Engineer Charles Schwab - San Francisco, CA April 2006 to October 2006 Developer: Employee Stock Purchase Program. Build J2EE Applications in Java, Struts, Hibernate, Swing, Web services, for WebLogic, Oracle. Clarify use cases and UI Specs. Write component specifications in UML 2.0. Environment: WebLogic Oracle, Ruby on, Rails, Web services, Hibernate, Ant, Linux. Systems Lead Architect Ingenuity - Redwood City, CA January 2006 to March 2006 Architect: Java/JEE based bio-informatics systems, knowledge base and ontological and software. Defined first company-wide reference architecture using Rational 4+1 views: Overview and individual systems described with use cases, component models, workflows, deployments plus storyboards for extensive Graphics-driven GUI, J2EE, and database Survey of prototyping methods including Prot g , Python, OCL. Develop Gene Ontology model for bio-informatics knowledge base. Collaboration architecture for Java Applet/Swing, JSF-Ajax, Spring, and Oracle RDBMS using UML

for use cases, work flows, object model, components, and ER Studio for database. SSO solution for enterprise clients using ACEGI and Spring Kerberos KDC and LDAP Environment: Spring, ACEGI, Hibernate, iBatis, POJO framework, Ant, Maven, Prot g , Eclipse, Swing, YWorks, Oracle 9i, UML, Sparx, JUnit, ER Studio, Python. Sr. Developer Wells Fargo 2005 to 2006 2008): Lead database architecture and message design system for Alerts. Led EBAM Team. JEE, MQ Series, BPEL, JEE, XML, JS. Engineer Wells Fargo - San Francisco, CA September 2004 to November 2005 Business Process Engineer: Designed, led, and implemented the first SOA BPEL solutions for the bank for business monitoring for claims-fraud management. Defined the integrations, design methods, development methods, target architecture for SOA BPEL solutions using IBM WBI-SF Process Choreographer Documented integration architecture including JMS and Web Service integrations with MQ series, mainframe systems, and, Microsoft-based Web Services. I implemented the first BPEL Web Sphere solutions, worked with the IBM development team directly to provide proof-of-concepts, prototypes, and the actual implementation. Defined application design methods and provided technical instruction on design and implementation to BPEL developers with design patterns. Designed and developed high-performance scalable engineering solutions for business and systems using UML 2.0, BPMN and BPEL tools with design patterns in WebSphere Process Choreographer integration applications WSADIE 5.1 J2EE JAX-RPC, BPEL and Web Services, WSDL and XSD through complete life cycle, end-to- end testing, Q/A, and production. Installed and Administered WebSphere Application Server, WBI-SF, DB2, MQ environment and deployments Worked with IBM Performance lab team to assess performance resolve issues with WBI-SF, and optimize performance and application code in clustered environment. Designed for SOAP fault handlers, logging handlers, process-to-process integration, and XML schema validation and implemented overall BPEL and Java/J2EE workflows. Developed engineering foundations to address high-performance persistent Web Service endpoints, business message validation, process and service versioning with in-flight process, logging, monitoring, and production reprocessing and recovery procedures. Environment: IBM WebSphere 5.1.1, Linux Cluster, MQ Series, DB2, WSADIE 5.1, WBI-SF, BPEL, J2EE, EJB, WSDL, SOAP, XSD (XML

Schema), UML, BPMN, Sparx Enterprise Architect, JAX-RPC, SAAJ, SoapScope, XML Spy, Andromeda, Hibernate, Maven, Axis, Tomcat, Linux, Eclipse, ClearCase. JEE Software Developer Charles Schwab 2005 to 2005 Java. Built User Login for ESPP JEE Struts WebLogic. Northrop Grumman, Lead Architect USPS - San Mateo, CA July 2003 to August 2004 Lead Architect for WebSphere platform. As result of work and proposal with Northrop, San Mateo center become the central focus of WebSphere projects for the USPS. Defined the component architecture for both Web-based and Web Service systems. Define security realms page protection, roles, and sign-on mapping for WebSphere applications Supervised 3 to 5 person groups for and as architectural resource on WebSphere applications. Provided instructions and assignments using Agile methods. With the group, design, model, prototype, and develop J2EE Web and Web Service applications using Struts, Spring framework with Oracle 9i and DB2. Analyze and prototype integrated enterprise retail payment system. Produced models and design documents for WebSphere apps - UML, XMI and other tools. Work with IBM to analyze WAS deployment, single-sign-on, and Web service issues

Trained of USPS staff in J2EE, WSADIE, Struts and Web Service technologies and UML tools. Implemented CVS change control with WebSphere WSAD 5.0 and 5.1, Developed USPS management plans for security, and disaster recovery Provided MDA-based modeling solutions to build code base to work with Spring framework and database. Deployed applications on system test WAS servers. Set up and deployed cross-system single-sign-on solution that used WAS using Active Directory Role/Group-based security solutions. Wrote USPS Deployment Guide for WebSphere applications. Used Spring (light-weight) J2EE framework, Quartz, and other re-usable architecture components to for Web, Web services and batch applications. Designed XML-based Web Service between remote agent using Apache Axis 1.2 and WebSphere using WAS 5.1 Designed and developed XSL-FO-based reports, lead XSL-FO design and integration Environment: J2EE 1.4/1.3 Struts 1.1, JAX-RPC, JDBC, EJB, JSP, XML, XSL, XSL-FO, WebSphere/WSAD 5.0., 5.1, Eclipse UML, TomCat, JDeveloper, MetaMill, Visio, Describe, UML 1.5-2.0, SPF, DB2 7.1, Oracle 9i PL/SQL, MQ Series, Axis, FOP, Krysalis Bar code, Ant, Quartz, -WAS-RBAC, Active Directory, Oblix, CVS. Retail accounts payable, weighing and rating, logistics. Editor-in-chief Java

Skyline - Pacifica, CA August 2001 to March 2003 Write articles and maintain industry magazine for Java Software Engineering. Track news about the Software field, the J2EE and Web Service platforms including WS-Reliability, WS-Security, work with CTOs in software industry, to develop technical info on: SOA, UML, WS-BPEL. Develop J2EE developer tutorial solutions and training guides for J2EE, Web Services and IDEs Wrote Content Management and news aggregation systems. Environment: WebSphere, WebLogic, JBoss, TomCat, Axis, Java, J2EE, Web services, UML, XML Web and UI developer SBC/AT&T 2003 to 2003 JavaScript, Java. JSP, WebSphere. Front- End Developer SBC/AT&T - San Ramon, CA May 2002 to November 2002 Design and implement High-volume on-line Web tool for SBC Yahoo! DSL service conversion/provisioning, Build frontend in JavaScript. Build backend in JSP/J2EE/IBM WebSphere 4.0 Design, develop implement Web-based tool in J2EE: JSP to EJB interface, MVC architecture, flow control manager using, Bean-based components, extensive JavaScript, DHTML, HTTP Design Web application using MVC and DTO design patterns. Application design. Train other developers on WSAD and design of Yahoo! application. Support, maintain, and enhance Web applications in Perl, Microsoft ASP/MDAC/ADO Oracle 9i. Write Java-XML parser, and SSL interface for service monitor Environment: WebSphere 4.0, WSAD 4.02, CORBA, JSP, JavaScript, ASP, JDeveloper, Perl, DreamWeaver Oracle 9i, BMC Patrol, Tomcat, Macromedia DreamWeaver, Perl, DHTML, Win 2000, Solaris, JacOrb, CORBA Team Leader and Lead J2EE Architect HearMe/MPath - Mountain View, CA June 1999 to August 2001 Architect and lead designer/ developer and lead of J2EE and NMS development groups for Software Service Product Platform Supervised two groups of 1 and 3 developers to construct a J2EE service management infrastructure, Network Management, and Message based JMS Billing integration. Assess product development platform, NMS and SNMP solutions. SNMP. Developed Java - C++ multi-thread agents using SNMP to monitor services. Designed service architecture and J2EE business platform for of IP Telecom/Telephony product. Architectural network designs for Voice network with Cisco switches for HearMe Voice Sever solutions. Architectural design including Web-based workflow and J2EE deployment business architecture. Designed and built Object-Relational Mapping to RDBMS and OLAP Server and Web

front- end with an SQL Dialect layer to run on multiple database systems: Oracle, Sybase, PostgreSQL, MS SQL business service for HearMe Voice Server and Built Services Management and Graphics Console, SNMP agents and performed load monitoring. Designed and built database architecture and optimized indexing for Oracle, PostgreSQL, Sybase SQL Server, MS SQL. Define system and component tests using JUnit Installed and maintained Oracle on Solaris, Linux, and MS SQL on Windows Server. Product delivery and deployment using Ant. Automatic server installation for Solaris and Linux Write product configuration manager, installation scripts and guide for Voice Server product. SNMP agent developer. Wrote HearMe Enterprise MIB. Integrated with SNMP products including DDRI ExAgent, Solstice, MS-SNMP, HP OpenView, Castlerock to run on Windows, Solaris. Architecture presentation materials for OSS CDR processing for voice solutions. Environment: Linux, Solaris, NT, J2EE, EJB/ Servlet/JMS, JSP, Perl, Ant, GCC/Sun C++, LDAP, JBoss, AWT GIF/JPG conversion, WebLogic, Python, JProbe, Together, Rational, IntelliJ, JBuilder, Excel VBA, JavaScript, XSLT, IE 5 Oracle, Sybase, DB2, MS SQL. Lead, Data Engineer ROLAP HearMe/MPath 1999 to 2001 and Business integration, SNMP Monitoring, Voice Server, JEE JBoss, JMS, SQL, HP Open View Scientific Engineering, Medical Bechtel (5 years) ASME Software Project Leader, Performance engineer for Structural Engineering Program (SAP) program, Fortran, Basic, NoSQL. Ingenuity (6 mo) Software Architect: IPA Gene Ontology Pathways UML, JEE. Cardiac Pacemakers(1 year): Data Engineer. Clinical Analysis, ETL, SQL Logistics, Retail USPS Northrup Grumman (1 year): Architecture, MDA, Java/JEE WebSphere, Carlson Companies (1 year) Developer Northwest Travel Card, COBOL, DB2 Software and Systems Amdahl (2 years): Team Lead Data Engineer/Warehousing, ETL, SQL, Essbase IBM BlueCross (1 year) Online System Testing, CICS Assembler Unisys (5 years) Systems Engineer, Performance Analysis, USAS Airline System, Analyst Scientific Computing, Fortran/COBOL, Prolog, Assembler Summary by Type of Technology Languages and Application Server Python: 3.6/3.7/2.7 (9 years) Flask, Django, ORM, Pyramid, SQLAlchemy, DB-API, psycopg2, pymysql, json, PySpark, boto3, data classes, http client, jupyter, numba, bs4, LXML, Sphinx, Email, attrs. Java JEE/Scala (14 years): Tomcat, JBoss, WebLogic, WebSphere: Spring Integration, JPA,

Hibernate, Process Choreographer NES, GWT, and Struts systems with multiple entry points, Spring Security, Session Management, ThreadLocal, ADF/JSF. Entire J2EE platform: JPA, Hibernate, JDBC, JMS, RMI, JNDI, Velocity. Scala (3): Scala-Spark, Actors/Akka, Lift framework. JavaScript:(8 years) JS programming, Prototype, JQuery, Ext-JS Scientific and other: Fortran (8 years), R (1 year), Julia, Mathematica. Ruby, C/C++(3), Haskell, Golang, LISP, Prolog(2), Assembler (5) Data Engineering, Analytics, ML Scientific Service Oriented Architecture (SOA), Data Engineering:(8 years) ETLs, SQL, NoSQL, ROLAP systems, Dashboards Graphics, Apache Spark/PySPark (2.5 years), AWS EMR, Databricks, S3, Aurora DataFrames, RDD, keras, tensorflow, Spark SQL, Pandas, Bokeh, Matplotlib, Numpy, Numba, SciPy, SymPy, Jupyter, Hive libs, Parquet, JSON, CSV, Machine Learning, AI and Scientific Algorithms: Combinatorial, numerical analysis, statistics, simulation, mlb, random forest, recommendation, K-Means, A* SOAP Web services (5 years), JSON, REST, JMS: IBM MQ Distributor, Apache ActiveMQ, IBM BPEL orchestration, parallel processing, transformations, and message routing Apache Camel, Apache CXF,Fuse ESB, Architecture, design planning, development and testing of integrated message processing applications in a SOA environment. Apache HTTP Client, WSDL, SOAP, JAX-WS, JAXP, JAXB, XPath, SAAJ, XML, XSL, XSD, JAAS, SSO, Quartz. Desktop MS: (5 years). VB/VBA, MS C, Foxpro. Mainframe (7 years): COBOL BAL, ASM Data Base and Object Relational SQL (18 years), Oracle PL/SQL, PostgreSQL, SQL Server, MySQL, DB2, Sybase Domain modeling, query optimization. DB Normalization, ORM: JPA, Hibernate, XPath. SQL Alchemy, Django ORM Spring JDBC. SQL Alchemy NoSQL: Memcached, Redis, MongoDB, Lucene, DB4O, Engineering DB Engineering DevOps Performance Security Built SAAS systems Set up CI on Jenkins and Hudson, Set up Maven, Nexus, Spring Boot, VMs for Ubuntu, Red Hat, CentOS Docker, Vagrant, Chef, Docker Built speed enhancements to Fortran SAP, mainframe performance analysis, recode in assembly language, benchmarking.SQL query optimization. OWASP AppSec, Network AppSec, Spring Security, Single Sign-on, SAML Source Control Git, SVN, ClearCase, Perforce, CVS, PCVS, SourceSafe. IDEs Eclipse, IntelliJ, Sublime, VS Code, WSAD-IE, JDeveloper, TSO/ISPF Project Management1111 and Leadership Project management of

development teams (12 years); Trained in EEO and AA Interviewing and Hiring, Performance Evaluation, Project Funding, budgeting, for multiple year projects, forecasting. Project planning and cost benefit analysis. Employee Engagement. I have worked with numerous methodologies including SDLC: RUP, UP, SDM, and ITIL Team Leader and Lead ETL Developer Architect Amdahl Corporation - Sunnyvale, CA 1998 to 1999 ETL developer on Amdahl Repair Performance Datawarehouse. Used Amdahl ObjectStar, Foxpro and SQL to extract and wrangle data from various sources Created Essbase Datawarehouse. Environment: Amdahl Mainframe, DB2, Windows Server, SQL, ObjectStar, Foxpro. C/C++ Developer Underwriting and Vehicle Rating Engines InsWeb 1998 to 1998 Data Engineer Mortgage Information Corp 1997 to 1997 Warehousing, ETL. ETL developer for Mortgage Data Mortgage Information Corporation 1997 to 1997 Build SQL Join system to pull data from various sources to create Mortgage Datawarehouse Environment: SQL, Visual Foxpro, Windows. InsWeb 1996 (6 months) Built Vehicle Rating Engine in C++. Took over, prepared, tested, and maintained C Expert System written by Lee Fesperman that performed Policy Underwriting Environment: Microsoft C, C++, SQL, SQL Server, Visual Basic Clinical Trial Statistical Programmer Guidant Cardiac Pacemakers 1994 to 1996 for Guidant Tachycardia PaceMakers team. Built and maintained Clinical Data Extraction and Reporting system consisting of over 200 SQL Queries to pull clinical hospital trial data and insert table data into Report using Microsoft Word. Environment: SQL, , Foxpro, Visual Basic, Windows. Quant Developer Loan Valuation Farmers Legal Action Group 1990 to 1990 Internet Services Education BA plus 20 hours of MS CS credits in Computer Science/Sociology/Math Science American University, University of California - Washington, CA Skills Java (10+ years), Python (9 years), SQL (10+ years), Data Engineering (8 years), Apache Spark (2 years) Certifications/Licenses Driver's License ITIL January 2017 to Present AWS Solutions Architect December 2017 to Present

Name: Garrett Calhoun

Email: stephencannon@example.net

Phone: 963.801.7886x7588