Cary Marcus Pennington
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Experienced Software Engineering and Development Executive

25 years of experience as a technical professional leading positive change. During that time I have hired and trained a support staff to improve professionalism, efficiency and customer service. I served as Project Manager and Lead Developer while resurrecting an integration project by revamping technology used to integrate fifteen genome database systems. My talent for communicating highly technical details to non-technical stakeholders has allowed me to effectively work with a people with differing backgrounds. As a Technology Manager I built a team of over 20 engineers and a culture around performance and efficiency where people loved working and felt valued. I believe in giving people the environment they need to be successful and allow them to do what they are great at. My experience spans over 200 clients of varying sizes and complexity to manage their technology needs. Several projects have involved "Greenfield engineering", building a purpose built system from the ground up. As an Architect, I have used my experience to guide designs to a scalable, maintainable, reliable and resilient end result using well-tested patterns as well as novel and innovative approaches.

TRANSFERRABLE EXPERIENCE

Leader – I have found this role in nearly every project I have been involved with. Either it is explicitly defined as part of a position, or I have been a part of teams that lacked a specified leader and have taken that role upon myself to ensure that a project was completed successfully and on time. I started and operated a successful consulting company for 15 years working with clients in different industries, different countries and with different needs. Proven business acumen by keep the company profitable and on the leading edge. I enjoy the challenge of building teams and leading and mentoring less experienced colleagues so they can learn from my experience and in most cases, I get to learn from them as well. Hire great people and give them the environment they need to succeed.

System Integration - Connecting disparate systems for greater access to data to allow for better visibility into data and to combine that information into actionable knowledge is my specialty. This includes working with third-party API's as well as custom, enterprise level orchestration systems. When data is accessible and semantically meaningful, strides can be made to automate and bring better knowledge to leaders for making more enlightened decisions.

Technologist - I am passionate about technology. I love the fast pace of the industry and work to keep up with the changing languages and areas of problems in the world. I pride myself on a working knowledge of many development languages like Java, C#, Ruby, PHP, Javascript, Objective-C, and SWIFT. With my education and experience, I am able to learn new languages quickly and utilize technologies to most efficiently solve problems. Some problem domains I am particularly interested include Systems Integration, Distributed System via SOA/Micro-service Architectures, Home Automation, Mobile Technology, and Human Computer Interaction.

Process Orientated – I have studied and applied the best practices of software engineering. I have studied Agile and CMMI processes and have applied them where possible to my work. I have also found it useful to not be confined to these models, but to use them as guidelines to manage a project or team successfully. This has proven useful in delivering many major systems.

Communication – I have discovered an ability to communicate technical details to individuals that are not "technically inclined". This is useful in getting requirements from clients or executives in plan English and coming to an understanding about what is possible in a time frame and with given technology. This has served me well in saving time and money by getting requirements down on paper quickly.

Self Motivated – Developing systems for clients of my consulting firm, has given me an appreciation for the importance of delivering projects correctly and on-time and on-budget the first time. This experience has allowed me to become proficient at estimating the resources needed for a particular project.

TECHNICAL SKILLS

Extensive Experience for over 25 years with a variety of programming languages and platforms.
Designed many different architectures and patterns; including Web Services, desktop application, Web Applications, Mobile Applications and command-line utilities.
Designed and developed iOS/Android applications, both mobile and Back End Service components.
Technically proficient with Swift, Ruby, Rails, ERB, HAML, PHP, ReactJs, Angular, Typescript, Node.js, HTML5, CSS3, Javascript, XML & XSLT as server-side scripting platforms and applications to provide support for e-commerce and informational web sites.
Designed and developed websites using Javascript and javascript libraries including Angular2, ReactJs, and Vue.js to create a rich and intuitive User Experience.
Familiar with design patterns including AJAX, FLUX, SOA, MVC, and micro services.
Developed on systems such as Apache, Tomcat, RoR, Struts/Struts2
AWS Certified Solution Architect - Proficient with the AWS family of products and their management including: EC2, S3, IAM, Lambda, AWS Serverless architecture, Elastic Beanstalk, RDS, RedShift, etc…
SQL, MySQL,Postgres MongoDB, and other databases and storage systems. Specialized in data design and information architecture. Deployed system on platforms such as Heroku, AWS, and S3.
Able to learn and use new programming languages quickly

EXPERIENCE

Sysco, Inc.   Remote   2022-present
Solutions Architect

Worked with a large client on complex e-commerce and infrastructure projects. Multifaceted role where I served as the technical architect for several teams and was involved with multiple initiatives. Designed architecture and data flow for personalization of images and text to better engage users and drive up conversion rates. Delivered on a new promotional code feature to allow users more control of their spend on products on the website. Designed and lead implementation to surface data to E-Commerce site from legacy applications. Helped to drive adoption of a GraphQL implementation already in progress. Platform: GraphQL, AWS, Javascript/Typescript, iOS, Redis, PostgreSQL, MongoDB, Node.js

Rocky Mountain Product Lab. (RMPL)   Remote   2021-present
CTO/Director Engineering

Designed and implemented green-field project to manage major equipment installations. Using React, Redux, and Node.js Lambda functions, I created a system from scratch to manage the sales and installation of technical equipment on construction sites. The flexibility of the design and the architecture have allowed this project to grow into a viable product for our client who is now expanding his business to include this a product. Platform: AWS, Javascript/Typescript, iOS, DynamoDB, Node.js, Serverless, Terraform, React

Y Media Labs. (YML)   Remote   2020-2022
Solutions Architect / Technical Product Owner

Worked on a large scale mobile application in the healthcare space. Multifaceted role in which I was responsible for the technical design and architecture of solutions with the ecosystem of the client as well we discovery tasks to identify dependencies as challenges within that ecosystem and find solutions to those issues as well. Working directly with leadership at the client, supported over 10 projects in first 4 months and the launch of three versions of the flagship mobile application. Designed and proposed a GraphQL implementation to simplify APIs and provide an easier working environment for front-end developers. A challenging and rewarding role where the work I have done has a direct impact on the health and wellbeing of millions. Platform: GraphQL, Kotlin, Swift, iOS, Java, Redis, MongoDB, Node.js

Recreational Equipment Inc. (REI)   Seattle, WA   2019-2020
Solutions Architect (contract)

Tasked to review, design, and implement a new program for UGC within REI. Took on a project to review the current UGC implementations reliance on a 3rd party company and their UI. After 2 months of research, I designed and presented a micro service architecture to integrate 3rd party vendors, easily change vendors if need were to arise, and remove the dependency on the vendor for UI. This received overwhelming support from the architecture community and I have moved on to implementing a POC of the system to begin initial phase of launch and performance testing. Also designed the data storage layer of the system and worked with semantics search team to realize ontological search and discovery of the UGC. Platform: Java(Springboot, Hibernate), Postgresql, Redis, MongoDB, ElasticSearch

Legalshield. Inc.   Ada, OK   2019
<u>Lead Software Engineer (contract)</u>

Took on innovative projects to move the goals of the company forward. Working on a 6-month contract, I was tasked with leading a team to understand the migration partners of this business from a legacy system to a new application. The new system still being under construction provided the opportunity to architect some of the components of that system to facilitate a faster transition and a more profitable company. Platform: Ruby on Rails using ERB templates

Cox Automotive, Inc.   Atlanta, GA   2018-2019
Senior Software Engineer

   Work with a team of 10+ developers to create innovative solutions to inventory needs of our customers. Though hired as an individual contributor, I quickly discovered architectural shortcomings in the enterprise systems. Over the year, I worked with several teams to facilitate a holistic view of the enterprise and to consolidate duplicate functionalities across systems. Migrated several features away from the monoliths implemented in Scala and Rails to micro services in Rails and Node.js. Streamlining the architecture allowed the business to realize efficiencies that we previously buried and to find new ways to use their data to better serve their customers. New systems to allow customers better vision into their inventory, on and off site, and better pricing and reconditioning tools were a couple of areas this work yielded results. Platform: Ruby on Rails with ERB and JSONBuilder templates, Scala, Node.js, React, AngularJS, Angular

BioIQ, Inc.   Atlanta, GA   2016-2017
Engineering Manager

   Lead a team to improve efficiencies through technology. The company was in need of an updated application to make the business more efficient. Along side the CTO, I built and managed a team to accomplish that goal. Worked with engineers to design and implement a system to replace the manual scripts. The new system would utilize SOA / micro-services to manage data. Data design was a critical component of this task. Reducing the time and computational intensity of loading multi-gigabyte data dumps into the system accurately and efficiently was a major hurdle to overcome. With some bid-data techniques and better ETL practices, we were able to modularize this process to bring the performance and accuracy in line with our requirements. Results are a platform producing at scale to support the rapid growth of the company. Personally developed proof-of-concepts for several external integrations which were designed into the system to make it more flexible and accepting of new vendors and partners for the business. Platform: Ruby on Rails with ERB templates, JQuery, plain javascript, Java

Director of Engineering

   Lead the team responsible for sales fulfillment. The new system was intended to move people from support positions to development. Given this situation, I leveraged that expertise and brought that team under my management. Mentored 3 junior developers to improve their technical abilities and their understanding of programming principles while increasing efficiencies off the support team. As the updated system came online, these engineers were prepared and were able to migrate into development and begin supporting the new application. Platform: Ruby on Rails with ERB templates, JQuery, plain javascript, Java

RentPath, Inc.   Atlanta, GA   2016
Senior Software Developer (contract)

   Rails Developer. Contracted to revive an aging product. Implemented several updates to the application including UI/UX updates and back-end updates. Researched several proprietary technologies to utilize those to implement sorting and improved location based search. Utilized Javascript, CSS, HTML, SLIM, Ruby, and Elixir. The updates to this product produced a viable product which was marketed and sold by the company to produce additional revenues. Platform: Ruby on Rails with ERB templates, JQuery, plain javascript

MDLIVE, Inc.   Sunrise, FL   2015-2016
Senior Software Developer

   Design and update mission critical Rails applications. As a leader of a distributed team, architected and refactored legacy code base to create a more manageable and maintainable infrastructure for the business offerings. Work closely with executive management to architect new subsystems and decouple aspects of the system which are logical micro-services. Mentor junior developers on best practices and code style to ensure a comprehensive consistency to the code base. Implemented TDD to better allow for testing coverage and green-to-green refactoring and feature enhancements. Platform: Ruby on Rails with ERB templates, JQuery, plain javascript, Java

QuintEvents   Charlotte, NC   2015
Senior Software Developer (contract)

   Design and update mission critical Rails applications. Debug and fix issues with 11 Rails applications. Working with other developers to design a system to simplify the infrastructure of the company and its marketing. Designed and built OAuth solution to integration company user accounts into the web applications for a single sign-on user experience.

   Amazon Web Services architecture for testing, staging and deployment. Managed and utilized git as source control.

TTI, Inc.   Anderson, SC   2014-2015
Senior Software Developer (contract)

    Design and implement custom Rails Applications for marketing and registration of tools for multinational corpora-
    tion. Responsible for database and data design for a new product and site launch. Successfully rolled out the site one-
    time and on budget. Worked with git as source control. Responsible for system maintenance on Backspace cloud
    servers. Platform: Ruby on Rails with ERB templates, JQuery, plain javascript, Java

The Pennington Group, LLC.   Athens, GA   2008-Current
Principal

    **Built business by building relationships with clients based on honest estimates and dependable work. Concen-
    trated on delivering cutting edge solutions to our clients problems to make there business more efficient and
    give them more time to build their business.**
    Maintained, hosted, and developed over 150 Ruby on Rails applications ranging from simple web sites with a MySql
    CMS backend to Enterprise applications managing data and infrastructure. Worked with all versions of Ruby from
    1.x to 4.1.x. Also worked with other platforms like Java, PHP, C#, Objective-C, Swift, amongst others. Deployed
    application to 6 self managed servers using apache and nginx. Utilized AWS service for application servers and RDS.
    Some clients Projects are listed below:

  Renew Media Productions   Atlanta, GA   Principle Software Engineer
    Technology designed and built for healthier living. Contracted to provide a Rails backend system for a mobile ap-
    plication already in flight. Based the design on GraphQL and Ruby on Rails to provide the time to market that was
    needed and to ensure that the API would not hamper the iOS developer already in process. System was completed in
    under 3 months and is currently in testing phase in anticipation of a public rollout in the near future.

  W9Manager   Atlanta, GA   VP Engineering & Development
    Driving all technological innovation. Contracted to design and implement a system to improve the efficacy of creat-
    ing, sending, and receiving W9 forms. As a Proof-of-concept, a micro-service architecture was used to provide the
    needed flexibility and allow for additional user interfaces in the future like iOS and Android apps. The deployment
    environment is AWS using EC2, EBS, S3, RDS, and Lambda to provide needed services for this application. As the
    system has grown into a production system, I have aided the CEO in building an off-shore team to continue new fea-
    ture development as we harden it for scale and increased fault-tolerance. Architect of all data storage and encryption
    to ensure fast access, safety at rest and in transit, and reporting to quickly find actionable insights to improve the com-
    panies offerings. Recently rearchitected the system to utilize GraphQL to simplify the front-end implementations as
    well as provide loose coupling between the components of the application in preparation of the beginning of devel-
    opment of a React Native mobile application.

  Junkin20 mAPP   Augusta, GA   Full-Stack Development
    Lead Developer. Contracted to design, architect, and implement API infrastructure, iOS app, and Android app for a
    startup business. This app utilizes location based services, subscription management, and user accounts and autho-
    rization to provide users with a customized list of advertising businesses along their route of travel. This system is
    currently under development and is not available on the app store.

  Cornell School of Hotel Administration   Ithaca, NY   PHP/Rails Development Consultant
    Update website and applications to responsive layouts for the School of Hotel Administration. This included over
    100 PHP pages and 5 Rails Applications. Updated data dependencies and layouts to achieve better performance and
    more intuitive user experience on both Mobile devices and Desktop.

  EGOS Ventures   Atlanta, GA   API/iOS Development Consultant
    Consultant on API updates. Added features and update the functionality of the Ruby on Rails application acting as
    the backend to a successful iOS application. Added Social functionality like Follow/Following, Privacy Setting, Push
    Notifications. Update the iOS application to provide the iOS Team with sample code to work with on how to access
    the API efficiently. Update Ruby On Rails API to added new Social Networking features to the application.

  SportSetter   Helsinki, Finland   Rails Development Consultant
    Architecture Update and code refactoring. Consulted on updates to the Rails architecture for the application.
    Refactored the code to better utilize new technologies for image uploads and image handling. Migrated all image
    handling to Amazon S3 service. Revised Rails system to be deployed on Amazon ECS. Reviewed iOS code of the
    application to gain better understanding of the purpose of the system and the needs of the App to architect the most
    efficient Rails infrastructure.

  Go Invisible   Los Angeles, CA   iOS/PHP Development Consultant
    Implemented UI Update. Consulted on updates to the user interface for 4 apps (InvisibleText, InvisibleSocial, In-
    visibleEmail, InvisibleTalk). Diagnosed and repaired many features to add the functionality the client was expecting
    from the app which was missing in the initial code. These updates involved massive changes and re-engineering of
    the app as well as PHP API infrastructure. Implemented in Objective-C with a PHP back-end.

Microf   Albany, GA   <u>Web Development Lead Consultant</u>

Lead Developer / Consultant charged with design and implementation of an automated credit application process. Responsibilities include design of a Ruby on Rails Application backed by MySQL Databases, data design to integrate with SalesForce API's, and implementations of online application and other pages. The project was developed using Ruby on Rails with MySQL Database. jQuery and straight Javascript were used for the Front-end implementation. REST principles were applied in the integration with third-party systems.

MapLarge, Inc.   Atlanta, GA   <u>Software Developer</u>

Lead Developer charged with the testing and updating of an Account management system in a very fast paced and high pressure environment. Designed and implemented the UI and REST API for the Account system to create a product to allow clients to successfully implement an end-to-end process of creating usable maps from their raw data with no programming needed.

REST implemented in C#. UI/UX implementation done using an Objected Oriented Javascript approach to a build up and "API" of javascript components that could be re-used in other parts of the system. This required careful attention to detail to ensure that all features and modules were properly encapsulated to ensure functionality when called under different circumstances.

InTopic Media, Inc.   Atlanta, GA   <u>Lead Software Developer</u>

Lead Developer charged with the technical design and implementation of all mission critical software. InTopic Media is contextual online advertising network servicing many of the top 10,000 sites on the internet with in-text advertising. As the VP/Lead Developer, I designed, implemented, deployed, and maintained the entire system including administration user interface, advertisement server, and algorithms for replacement of keywords.

Built and managed several contractors as well as a team of 3 regular developers over the course of the project.

The University of Georgia   Athens, GA   2003-2010
Center for Tropical & Emerging Global Diseases (CTEGD)
<u>Scientific Computing Professional Specialist</u>

Lead Architect and Engineer charged with revamping a database integration project, ApiDB.org. Original System was to integrate 3 disparate database systems into a single portal site to allow biologically meaningful queries across all sites. I designed and implemented a novel system to abstract the backend systems and provide seamless integration of the component sites. Today that portal, now located at EuPathDB.org, consists of 11 component sites with more to be added soon. The integration system remains unchanged and has scaled to accomplish this with no performance degradation. This has allowed the project to pursue more grants for research on more organisms that wish to be included in this resource.

Lead Developer responsible for redesigning the user interface for 6 project related sites. This involved user testing and interviews to ensure that the product produced met their needs in a clear, intuitive manner. A new interface was developed to put advanced data-mining techniques into the hands of non-technical biologist to allow them to utilize our resources more completely. This work is documented in **The Strategies WDK: a graphical search interface and web development kit for functional genomics databases. (**[*http://database.oxfordjournals.org/content/2011/bar027.full.pdf+html*](http://database.oxfordjournals.org/content/2011/bar027.full.pdf+html)**)**

Environment Linux/Unix, Apache, Tomcat, Java, Javascript, CSS, XML, XSLT, PERL

Project Description – This project is funded by grants from National Institute of Health (NIH) and the Bill & Melinda Gates Foundation to develop bioinformatics resources to aid researchers in the search for a cure for parasitic diseases such as toxoplasmosis and malaria. Resources include PlasmoDB.org, CryptoDB.org, ToxoDB.org, TrichDB.org, GiardiaDB.org, TriTrypDB.org and EuPathDB.org.

Ipswitch Inc.   Augusta, GA   2000-2002
<u>**Senior Quality Assurance Engineer**</u>

Noticed a lack of automation in the QA Department. Worked with a team to develop automated testing techniques for several functionalities (installs, large file transfers). This decreased the defects in installations of the software on all operating systems as well as decreased the time-to-market of new versions of the products.

Continued to assist support staff with difficult problems by utilizing the facilities at the QA department's disposal to recreate complicated scenarios to find solutions for customers.

<u>**Senior Product Specialist / Team Manager**</u>

As senior level support agent, was responsible for handling escalated issues from others on the team. Gained a great deal of experience dealing directly with customers and solving their problems in real time. Promoted to Team manager after only 6 months in the position.

As Team manager, developed new protocols for dealing with customers and handling escalated issues. Developed in-house software to track resolution statistics to aid in decreasing hold time and time-to-resolution of customer issues.

Environment Windows Development, C++, VB, C#

EDUCATION
The University of Georgia, Athens, GA
Masters of Science, Computer Science
 Emphasis on Distributed Computing, Web Service Technology and Service Oriented Architecture
 Thesis work involved designing and implementing semi-automatic, semantic Web service discovery and composition
 (METEOR-S). Took this project from a collection of tools to a combined application capable of making estimation on
 the Quality of Service based on published policies of the service.
 Authored "*Introduction to Web Services*" chapter in the book
 "**Semantic Web: Theory, Tools and Applications**" published March 20, 2008

Furman University, Greenville, SC
Bachelor of Science, Computer Science
 Concentrated on Internet technology, Database Design and Implementations, and Image Processing techniques.

PROFESSIONAL CERTIFICATIONS
Amazon Web Services Certified Solutions Architect   2022