

James C. Royal
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EXECUTIVE SUMMARY:

Software Leader, Architect & Engineer with 15+ years of experience in designing and implementing B2B and B2C solutions. Comprehensive experience in product engineering, enterprise architecture, and software development with a passion for researching and prototyping the latest technologies. Successful at leading full product lifecycles, from inception to production release leveraging agile and waterfall methodologies. Currently seeking leadership opportunities in research and innovation on the forefront of technology to deliver digital experiences. Technologies include: Web and Mobile (full-stack), Cloud based services and architecture, IOT Cloud Solutions, AI and Neural networks, Cognitive Engines.

EDUCATION

B.S. Computer Science. Florida Gulf Coast University, Fort Myers, FL.

ENTERPRISE ARCHITECTURE & DEVELOPMENT

Hertz Rent A Car (Native Application): Hertz Rent a Car's flagship B2C mobile offering for customer bookings and reservations. Native mobile **iOS** and **Android** applications. Supporting 84k daily active users. (1 million monthly active users). Generating about \$1.5M daily revenue, averaging \$45-50M monthly and \$450M annually in revenue which accounts for 1/7 total corporate EBITDA . Swift, Kotlin, Java, Fastlane, Jenkins, Web Services, Optical Character Recognition, QR code.

Hertz Exit Gate (Physical Gate Automation): Hertz's edge IoT application. A solution to automate exit lanes at Hertz airport and Neighborhood locations. Siemens S7-1200 Programmable Logic Controller, iOS, Android, AWS Greengrass, Cloud Computing, Cloud Networking, Embedded Engineering.

Hertz Rent a Car (Legacy Application): Hertz's legacy mobile offering, Cordova Hybrid Application. Cordova, iOS, Android, .net.

Resideo (OAuth 2.0 Redesign): Resideo's web commerce store front Authentication workflow redesign. Auth0, OAuth 2.0, Active Directory,

Oracle's Hotel Mobile (B2C Global Solution): Oracle Hospitality's latest entry into the global mobile space. A completely native mobile PMS solution capable of consuming from three back-ends – OPERA Cloud, OPERA Suite 8, OPERA OWS. Swift, Xcode, Rest Webservices, OAuth 2.0

OPERA Cloud Mobile (B2B Global Solution): Oracle Hospitality's legacy mobile product. A hybrid mobile PMS solution bridging web and native technologies. Objective C, Javascript, Java, JSP, JSFF, Oracle ADF

OPERA Cloud RFID (B2C and B2B): Software to cut RFID keys for Hotel door locks, Ingenico Companion, Kaba Key Systems, Objective-C, Bluetooth, Mifare 1K RFID Cards, iOS, Java

OPERA Cloud Ingenico Companion Credit Card Processing (B2B): Software which enabled credit card payments via Ingenico Companion Device, Apple Pay, Bluetooth, Objective C, Encrypted and Non-Encrypted swipes, Java

OPERA Cloud Mobile Signature Capture (B2B): Software enabling the ability to sign documents via iOS, Cocoa, Objective C, Java

OPERA Cloud Mobile Printing (B2B): Software enabling mobile printing by means of spooling print tasks to remote printers, iOS, Java

OPERA Cloud OCR (B2B): Software that enables the ability to scan Passports and Driver License in order to perform guest check in. Optical Character Recognition, Java, JSON

WORK EXPERIENCE

Director Of Mobile Software Engineering, Hertz Rent A Car. Estero, Florida (remote) Jan 2020 - Apr 2022

- Responsible for leading, coaching, and hiring a global mobile operation comprised of five locations. Baton Rouge LA, Bannockburn IL, Estero FL, Dublin Ireland, Kraków Poland. Liaising with procurement and corporate finance business partners to support the ongoing mobile transformation.
- Lead staff augmentation, migrating away from an IBM outsourced team to sourcing Hertz full time employees. Significantly reduced product spend and run rate while also increasing engineering technical competencies and effectiveness. Partnered with procurement and corporate finance business partners.
- Established mobile engineering standards and best practices and set daily expectations to achieve success
- Designed, architected and delivered a complete technical rewrite of Hertz's flagship B2C Mobile Offering "Hertz Rent A Car". Migrating from Swift 3.1 - Swift 5x. Reducing application crashes from 3000 per day to a manageable 5 - 10 per day. Positively impacted Customer Satisfaction which improved a 1 star app to become a 5 Star app. Reduced call center daily volume for mobile incidents. Improved App store rankings in the Travel Category up from a 100+ rank to 35 - 45 on average.
- Introduced Mobile observability via Dynatrace and standardized the engineering process, providing the necessary visibility into production incidents improving mobile SLA's
- Introduced CI/CD with Fastlane, enabling the team to deploy to the app stores without engineering involvement. Bringing the mobile engineering initiative into SOX Compliance.

Hertz(Leader of Dev/Ops team)

- Responsible for leading, coaching, and hiring a Dev/Ops team to support engineering and product development.
- Lead the team to migrate our Kubernetes cluster and Docker containers out of IBM cloud private and into **AWS EKS saving \$1M IBM licensing cost.**
- Lead the team in the development and support of five engineering environments, **Dev, QA, Staging, Pre Prod, and Production**
- The team was responsible for development and maintenance of CI/CD Pipelines utilizing Jenkins.
- Achieved full **ephemeral deployments** enabling success of the IBM cloud private migration to AWS EKS.

Hertz(Security)

- Responsible for leading mobile security and standardizing Hertz mobile enterprise security posture.
- Lead a team to implement Imperva endpoint protection surrounding our mobile and cloud based production environments.
- Advocated for mobile security best practices standardizing SSL signing supporting mobile cipher suits
- Coached the team on the differences of asymmetric vs symmetric cryptography and certificate pinning and how best to implement a security posture which is complementary of Mobile.
- Lead security incidents, bot attacks, and brute force attacks to our mobile endpoints. Adjusted our security posture to mitigate future attack vectors.

Enterprise Software Engineer and Architect. Oracle Inc. Berlin, Germany (remote) June 2014 – 2019

- Designed, architected, and delivered a ubiquitous Property Management Solution (PMS) to integrate with cloud and on-premise web services. Opera Cloud, Opera OWS, and OPERA Suite 8
- Architected and lead development of microservices as a creative solution for OPERA Cloud peripheral hardware integrations which supports (RFID, OCR, and Credit Card Readers)
- Managed the re-platforming of OPERA Cloud Mobile introducing new design patterns
- Development lead for Hotel Mobile applications targeting over 370,000 hoteliers
 - Managed global team members (Berlin Germany, Hyderabad India.) to ensure development consistency and timelines were met
 - Design and implementation of REST APIs for security module with OAuth2 based protection
 - Increased performance by implementing a contemporary solution to reduce latency
- Innovated mobile solutions leveraging ORACLE's J2EE Framework to interface with external devices:
- Steered ORACLE Hospitality strategy towards a native implementation of its core mobile hospitality products
- Ingenico Credit Card Readers, Ingenico RFID Readers, and Optical Character Recognition interfaces
- Led code reviews ensuring coding standards and defined best practices
 - Ensure the use of comments, prevent daisy-chaining code, create documentation
 - Created a risk controlled environment based on OWASP security standards
- Delivered prototype solutions to test immersive user experience concepts and models
 - Wearable technology and beacons
- Created architectural standards and managed code repository, branching and code reviews

Software Engineer III. Lutgert College, FGCU. FT. Myers, FL.

May 2012 – March 2014

- Managed a team of five engineers to develop a B2C solution leveraging a comprehensive AWS architecture for a University Learning Management System.
- Managed the design and implementation of a mobile LMS solution utilizing the following technologies: Dependency Management, Instruments, Objective C, Version Control, OAuth, Restful Web Services, and MVC
- Managed the design and implementation of a cloud-based infrastructure within Amazon's Web Services utilizing AWS EC2, and AWS SES
- Responsible for the management of three cloud servers: Ruby on Rails, PSQL, and Redis
- Facilitated provisioning profiles and code signing certificates via Apple's developer portal.
- Facilitated code testing and quality assurance utilizing Apple's Test Flight binary distribution system.

Lead Software Engineer. Chepri. Columbus, Ohio March 2010 - June 2011

- Responsible for the development of mobile applications targeting the major mobile platforms
- Worked in a team environment and successfully launched two applications
- Designed solutions to authenticate, authorize and consume Restful Web Services Objective C OAuth

PROFESSIONAL SKILLS

Languages: Java, C/C++, Ruby, Swift, Objective C, Shell Script, MySQL, XML, JSON, JavaScript, JSP, GO Lang, HTML, CSS, Markdown, No SQL (Mongo DB)

Frameworks: Node.js, Express.js, Phantom.js, Cocoa Touch, Android, JUNIT, Rails, Docker, Ant, Gradle, Arduino, ADF

User Methods: A/B Testing, Multivariable Testing, Storyboards, Persona Development

Methodologies: Agile, Waterfall, Scrum

Servers/Web: Node Server, Soap Web Services, Tomcat Web Server, Apache Web Server, Weblogic Web Server, Restful Web Services

OS Platforms: UNIX Command Line, Server Administration, ZSH, SSL, TLS, Linux (Red Hat, Cent OS, Ubuntu, and BackTrack5) Windows, Mac OSX

Package Mgr: Mac Ports, rpm, apt-get, dpkg, Homebrew, yum

Dependencies: Maven, Cocoa Pods, NPM, Gem, Pip, easy-install, Bower

Paas/Saas: AWS, Heroku, Azure

Tools: Git, SVN, Eclipse, Soap UI, Xcode, Instruments, Android Studio, Visual Studio, SCP, FTP, SSH, RSYNC, GREP, AWK, FIND, CRONTAB, LOCATE, GIT, SVN

CI: Hudson CI, Jenkins CI, Travis CI

UX PROTOTYPING AND SECURITY RESEARCH

iWatch Prototype for Hospitality Industry (Connected Technology): [iOS](#), [Swift](#), [Objective C](#), [Xcode](#), [iOS Extensions](#)

Wire Tap: Network penetration and network security analysis. Was successful in exploiting digital systems and gaining remote access. Acquired login information and ability to modify credentials. [Metasploit Framework](#), [Nmap](#), [Wireshark](#), [Backtrack 5](#), [WEP](#), [WPA](#), [WPA2](#), [TCP](#), [Aircrack-ng](#), [Ettercap](#)

Khards: Front-end and back-end interaction design research. [Restful Web Services](#), [OAuth](#), [Version Control](#), [JSON](#), [Objective C](#), [Dependency Management](#), [Cocos2D Framework](#), [Open GL ES](#), [MVC](#)

Wire Bee (Connected Technology): Embedded application for controlling an Arduino micro controller wirelessly utilizing Xbee Wireless technologies. [Arduino](#), [Objective C](#), [iOS](#), [Cocoa Pods](#), [Xbee Wireless 802.15.4](#), [Circuit Design](#), [Soldering](#), [Electricity](#), [Capacitors](#), [Resistors](#), [Server](#), [Client](#)

JOURNAL ENTRY

Royal, J., Rodriguez, W., Nguyen-Huynh, N., Fernandez, A., Fernandez V. (2014). Developing a Mobile Learning Environment: An Axiomatic Approach, *Journal of International Technology and Information Management*, 23(3/4), 45-60.

PROFESSIONAL DEVELOPMENT

Apple WWDC 2016 – Oracle Representative