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Summary

Experience

- Proven Android developer, mobile applications architect, and teacher.
- Proven leadership and mentoring skills.
- Excellent communication and public speaking skills.
- Published author of peer reviewed papers and industry articles.
- 25+ years designing and developing software applications, including:
 - 6 years with AT&T Bell Laboratories
 - 17+ years mobile application development, including:
 - 10+ years Android application development
 - Participated in 1st Android Developer Competition (2008)
 - 3 published apps; 2 apps limited publication (special audience); 1 app pending
 - 7+ years J2ME, Palm, Blackberry

Mobile App Awards:

- [PCWorld: 10 Must-Have Apps for Your BlackBerry \(YouMail\)](#)
- Finalist for New Product or Service of the Year -Telecommunications
[The American Business Awards 2009 \(YouMail\)](#)

Teaching

- University of California at Irvine:
 - Instructor for: *Application Development for Android Devices* and *Advanced Application Development for Android* (2010 – 2018)
 - Instructor for Corp. Services (2011 – 2015)
 - Member of the [Advisory Committee for Mobile Application Development](#) (2011-2018)

Community

- Member of [Solid State Depot](#)
 - I like to share my knowledge with others; learn new things; and tinker with digital electronics.
- Founder SoCal Android Developers Group (2008 – 2017)
- Founder Orange County Embedded Java (2006 – 2011)
- Frequent speaker at local user groups and code camp conferences.

Experience

Connific

Senior Android Developer (contract), January 2018 – March 2019 (14-months)

Developed privacy-based social introduction and networking applications. Developed efficient messaging library for Firebase RTDB that reduces reads and therefore costs. App publication is pending.

Technologies: Android and Android Architecture Components, Java, Firebase RTDB, Fabric, Crashlytics, Android Studio, Git

Sensorcast.org

Principal Architect and Founder (now part-time), January 2011 – Present (8-years)

Designed and implemented end-to-end platform for collecting and dissemination of crowd-sourced sensor data from phones and other devices. Intended for use by Citizen Science, public outreach, and STEAM education, the platform provides tools and APIs for users sensor data into a distributed database; merges that data with data from public sources – e.g., NOAA, USGS, NASA – and provides tools and APIs for accessing, analyzing, visualizing, and mining the data. The platform shares some thematic similarities with IoT, but only in the area of collection. Work included data modeling, database implementation, JavaWS, unit testing and stress testing, and 4 Android applications. The platform and a subproject are in use (5+ years) by scientists at the Univ. of Wisconsin's IceCube Particle Astrophysics Center ([WIPAC](#)), to observe and better understand cosmic-rays that impact the earth. Peer reviewed papers have been published (see Publications below). This project has a growing base of users and volunteer collaborators that has found funding from private sources and grants, including the American Physical Society and the John S. and James L. Knight Foundation. (This is now ongoing part-time work I do in my spare time.)

Technologies: Android, Java, Tomcat/JavaWS, Postgres 10/PostGIS/sharding, Eclipse/Android Studio, SVN, Git

University of California at Irvine

Instructor for Android; and, Member of the Advisory Committee for Mobile Application Development May 2010 – 2018 (8-years)

Provide college credit instruction for *Application Development for Android Devices* and *Advanced Application Development for Android*. As a member of the advisory committee I participated in advising and setting the direction for courses in mobile application development and the corresponding certificate program.

Thales Avionics, Irvine, CA

Architect; Senior Android Developer (long-term contract), June 2013 – November 2015

Designed and implemented UI, application, and system features for various aspects of Thales', Android-based, in-flight entertainment system. Work included solving database performance issues, game and 3rd party application integration, general and UI performance issues, system networking and aircraft event integration; and prototypes and baseline development for high-throughput content distribution, off-plane Internet-via-satellite connectivity, IPTV, and an application that engages the user via points-of-interest along their flight. Also performance and comparative analysis for Android UI testing tools. Separately provided Android training services through Thales' in-house University. Products worked on are deployed and in-use with American Airlines and other carriers.

Technologies: Android, Java, Junit, Eclipse, Android Studio, Git, Jira, Confluence, Agile

Smilefish, Newport Beach, CA

Senior Android Developer (short-term contract), February 2013 – May 2013

Designed and implemented UI, image and data caching, and integrating REST services for a Las Vegas casino application which provide the user the ability to browse casino amenities and maps, and plan a complete stay by booking rooms and shows. App was published to Google Play as *MonteCarlo Resorts*.

Technologies: Android, Java, Junit, Eclipse, IIS, iOS

Apptico Technology Group, Laguna Hills, CA

Principal Architect, Project Lead (long-term contract), December 2010 – September 2012

Designed, implemented, and managed end-to-end development of a system providing users the ability to order food and merchandise to their seats at sporting and entertainment events, using their Android or iOS phone. Known as *Stadium!* the application was implemented for Android and iOS and deployed into casino owned venues in Las Vegas, UNLV, and Mile High Stadium, Denver, CO. The app was published to Google Play and Apple AppStore as *Stadium!*

Technologies: Postgres 9.1 with replication, Tomcat with clustering, Micros POS backend systems, Android, iOS, Eclipse, Junit, Multi-tiered server deployment, PCI compliance.

SecureAuth Inc., Irvine, CA

Senior Android Developer (short-term contract), October 2010 – December 2010

Research and solved specific issues with respect to implementing company's flagship product onto Android. This allowed the company to move forward with a full implementation of their product on Android.

Technologies: Android, Java, Eclipse, Bouncy Castle

SolidMedia Inc., Hollywood, CA

Senior Android Developer (short-term contract), June 2010 – October 2010

Designed and implemented Android application for e-commerce/shopping, and entertainment for West Hollywood.

Technologies: Android, REST, Eclipse, SVN, Jira

ProHealthCare, Lake Success, NY

Senior Software Developer (short-term contract), October 2009 – June 2010

Designed and developed an enterprise and Android application which provided physicians the ability to manage their appointments and related patient information from their Android device. Deliverables included deciphering the API to a legacy scheduling system; an application to translate HL7 artifacts and insert them into the legacy scheduling system; a web application to serve appointment objects; and, the Android application which could also interface to Google Health.

Technologies: Android, Glassfish, VirtualBox, GE Centricity, Eclipse, SVN; Legacy: WebLogic 5.x, Oracle 8i, NT4 , Java 1.1

YouMail, Inc., Irvine, CA

Principal Mobile Developer, December 2007 – October 2009 (2-years)

Designed and developed acclaimed Visual Voicemail for BlackBerry devices. Finalist for New Product or Service of the Year -Telecommunications 2009, and recognized by PCWorld as one of the 10 Must-Have Apps for Your BlackBerry. Also developed mobile web site for iPhone, Nokia, and other misc. devices.

Technologies: BlackBerry OS, Java 1.5/1.6, BlackBerry OS, XML, JBoss, Spring, FreeMarker, Eclipse, SVN

BlowfishWorks, Inc., Westwood, CA

VP Mobile Applications/Principal Architect, October 2006 – August 2007 (11-months; startup effort)

Designed and implemented a clustered video-based advertising application for cell phones that provided 100% accountability for tracking ads. Developed the server application using Apache/Tomcat, Hibernate and MySQL and the cell phone application using J2ME and various API's. Managed offshore porting efforts.

Technologies: Java 1.5/1.6, J2ME, XML, JSP/HTML, JUnit, Ant/Antenna, Apache 2.2x, Servlets/Tomcat 5.5.x clustering, Hibernate 3.2.x, MySQL 5.0.37 clustering, Eclipse 3.x, Enterprise Architect 6.5, Subversion, PKI Security (openssl, https, keystores, code-signing, smartcards), Fedora 5&7, Windows XP, Windows Mobile, ffmpeg and a variety of utilities for analysing/editing media encodings. J2ME Specific: MIDP 1.0/2.0, CLDC 1.x, JSR-135 (Multi Media), JSR-75 (PIM/File), JSR-172 (Web Services), JSR-211 (Content Handler), EclipseME, Sun/Sony-Ericsson/Nokia/Motorola SDKs, J2ME Polish, BouncyCastle

TelePacific Communications Corp., Los Angeles, CA

Senior Software Developer (short-term contract), December 2005 – March 2006

Designed and implemented a work-order scheduling system that managed the calendars of people and equipment, and scheduled those resources (overlapping, using a *best fit* algorithm) to fulfill work-orders from the Arbor work-order system (a common work-order management system for the telecommunication industry.) Utilized Java 1.5, Swing, RMI, Hibernate, JUnit, MySQL and SQLServer.

Firedrum Marketing LLC., Scottsdale, AZ

Senior Software Developer (short-term contract), April 2006 – October 2006

Designed and implemented an email delivery component that efficiently delivered subscription-based email to the company's client members. This component increased capacity and reliability by more than 1000% (the limit to which it was tested), and reduced memory requirements by more than 600%. These efficiencies in-turn created greater concurrency, throughput and performance. In addition: Fixed a number of reliability issues in legacy code. Utilized Java 1.5, Tomcat 5.5, MySQL.

OneFob.com, Chandler, AZ

Principal / Principal Architect, May 2005 – December 2005 (8-months; startup effort)

Designed and implemented a virtual security device, analogous to a Smart Card, which could reside on commodity hardware and facilitate secure transactions — loyalty programs, credit/cash purchases, banking/brokerage transactions — and data storage — receipts, coupons, tickets. Designed and implemented prototypes for loyalty program, credit purchases, receipts, and tickets. Designed procedures and protocols for user backup, recovery, and invalidation in the event of lost, stolen, or migrating an old device to a new one.

Technologies: Fedora Core 3; Apache/Tomcat 5.5.x; Java 1.5, Swing, JDBC, JSE, J2ME CLDC 1.x/MIDP 1.x/2.x, JavaCard 2.x, XML; Hibernate 3.x, MySQL 4.x; BouncyCastle; GnuPG; OpenSSL; PalmOS 5.4.x; Eclipse 3.x; netBeans 4.1; Ant/JUnit/SVN; Windows XP.

Forever Living Products, LLC., Scottsdale, AZ

Web Applications Developer (short-term contract), July 2004 – May 2005 (10-months)

Designed and implemented a web-application that provided users the ability to build their own website to support the sales of retail products. A primary feature was a CMS system which allowed users to edit/upload text, images, titles, and keywords that comprised their site. Also, implemented a companion web-application which provided a servlet-based mechanism for securely administering DNS zone entries as a single transaction across multiple servers.

Technologies: RH Linux 8, Fedora Core 3; DB2 8.x; Apache/Tomcat 4.3; Java 1.4, JDBC, JSE; Struts; Eclipse 3.x; Ant/JUnit/Subversion; BIND; Windows 2000/XP.

WAZ-Metro, Tempe, AZ

Principal, July 2004 – February 2005 (8-months; startup effort; sold)

Designed, configured and installed a subscription-based wireless mesh network in downtown Tempe, AZ using off the shelf hardware and open source software. Also, physically measured and mapped signal strength and coverage areas. Specified and negotiated service and equip. contracts; and site install agreements. Acquired by MobilePro.com in March 2005.

Technologies: Fedora Core 2; Solaris 2.9; Tropos MetroMesh & Linksys routers; Embedded Linux firmware; NoCat; iptables; Radius; Java 1.4; Apache/Tomcat 4.x; MySQL 4.x.

Transcordia, LLC., Scottsdale, AZ

Principal Developer (short-term contract), November 2003 – July 2004 (9-months; startup; sold)

Designed and implemented prototypes for a proprietary consumer electronics device that integrates a Palm OS cell phone, GPS, and Text-to-Speech hardware. Provided comparative analysis of technologies and devices, their relative costs, and their suitability to the final design.

Technologies: Palm OS 3.5–5.2; J2ME CLDC 1.x/MIDP 1.x/2.x; CodeWarrior 9.x for Palm OS & Symbian OS; WebSphere Device Developer 5.5–5.6; IBM J9 VM for Palm OS & Pocket PC, Windows 2000.

Critical Team, LLC., Boulder, CO

Principal / Senior Architect, January 2002 – November 2002 (11-months; startup effort)

Designed and developed handheld point-of-care clinical application for a local hospital. This design utilized a forms based approach using XML as the form definition language and MIDP on Palm devices as the deployment equipment. Personally implemented wireless object synchronization, XML-based object definitions and compilers, MIDP/AWT user interface elements, HTML/JSP data entry screens, patient treatment business logic.

Managed customer relations; collected on-site clinical, technical, environmental, and cultural product requirements.

Technologies: Java 1.3–1.4, Swing, AWT, XML; J2ME CLDC 1.x/MIDP 1.x; Servlets, Tomcat 4.x, MySQL 3.x; Palm OS 3.5–4.1; Solaris 2.8; Windows 2000.

The Radiance Group, Inc., Boulder, CO

Dir. of Engineering / Architect / Acting CTO, October 1998 – September 2001 (3-years+; sold)

As an architect: Provided architectural analysis of existing product suite, identifying performance and reliability issues. Evaluated, recommended and lead architecture modifications. Re-organized the development methodology improving efficiency and reliability; automated the application build, integration, and deployment processes. Re-architected company's point-of-care clinical application, including its Oracle schema. Principal in re-architecting the company's product suite. Promoted in August 2000. Directed all aspects of development organization while maintaining architect/developer duties. Directed and led major installations, trained physicians and managed customer service issues for a 3 hospital pilot program. Promoted to CTO in June 2001, retaining all other responsibilities. Managed technical presentation and due-diligence examinations with potential buyers.

Technologies: Java 1.1–1.3; Weblogic 4.x, 5.1 SP9; HTML, JSP, Tomcat 3.x, JNDI and JMS; J2ME CLDC 1.x/MIDP 1.x, Palm OS 2.x–3.5, Windows CE 2.0-2.2, PocketPC; Windows NT/2000, Solaris 2.7–2.8. Healthcare: CPT, IDC9, HCPCS, Multum, HL7.

InfoBeat, Inc., Denver, CO

Senior Architect / Team Lead, March 1998 – October 1998 (8-months)

Provided architectural analysis, identifying performance and reliability problems, of a multi-node e-mail publishing system. Designed and implemented a near real-time distributed system & application performance & fault monitoring application.

Technologies: Java 1.1–1.2, AWT, JNI; Solaris 2.6 SPARC/Intel.

Team 6, Inc., Boulder, CO

Principal Architect, November 1995 – March 1998 (2-years, 5-months; startup; sold)

Designed and implemented a high-performance, high-availability, object-oriented, multi-threaded, clustering-enabled HTTP-server with single and multi-threaded API's, support for Java servlets. Also, script-based Internet scanning tools. Prototyped the conversion of a C based software life-cycle management system to a network aware Java based system.

Technologies: C/C++, Java, JNI, JavaScript, HTML, Windows 95/NT, Solaris 2.4.

Point Source Communications, Colorado Springs, CO

Contract Technical Writer: November 1997 – February 1998 (part-time)

Wrote various technical documents and white papers for Sun Microsystems products and the Solaris operating system.

US West Interactive Video Enterprises, Inc., Boulder, CO

Senior Architect: November 1994 – August 1995 (10-months; startup; US-West de-funded)

Designed and implemented event driven, session oriented, dynamic content, multi-threaded applications for use in e-Commerce.

Technologies: C/C++, Netscape Server, Solaris 2.4–2.5.

Aztek Engineering, Inc., Boulder, CO

Senior Software Engineer: August 1993 – August 1994 (1-year contract)

Designed and implemented end-user applications for interactive cable TV (GTE MainStreet).

IBZ Digital Productions, Inc., Boulder, CO/Frankfurt Germany

Senior Architect / Team Lead: October 1991 – June 1993 (1-year+7-months; company sold)

Designed and implemented Hierarchical Storage Management file-system for optical disk jukeboxes. This flagship product facilitated the sale of the company.

AT&T Bell Laboratories/Unix System Laboratories, Summit, NJ

Member of Technical Staff: October 1985 – October 1991 (6-years)

Designed and implemented an OODB on Tuxedo RMS, including multi-arena generation scavenging. Also: Lifecycle mgmt. application development; and, UNIX OS development.

AT&T Corporate Data Systems, Piscataway, NJ

Member of Technical Staff: March 1985 – October 1985 (8-months; transferred)

Soft-Switch Inc., King of Prussia, PA

Software Developer: September 1984 – January 1985 (5-months; startup; laid-off due to budget)

Applied Computer Products Inc., Philadelphia, PA

Principal: November 1982 – June 1984 (2-years; startup; sold ownership)

Drexel University, Philadelphia, PA

Computer Center Staff: December 1980 – January 1983

Education

- Computer Science and Psychology, Drexel Univ., 1980 – 1983
- *Advanced Database Systems and Design*, Graduate Work, Stanford Univ., 1986
- USA FAA Private Pilot License, 1987
- USA FAA Instrument Rating, 1988
- EMT-B with IV-MAST, EKG analysis, and External Defibrillator additions/privileges, Boulder Community Hospital, 1994
- *Film Production Management & Producing the Feature Film*, Univ. Colorado Boulder 1997
- NAUI SCUBA Instructor, Univ. of Colorado, 1999-2002
- *Data Exploration Analytics & Visualization*, UCI, Fall 2014
- *Introduction to Data Science*, UCI, Winter 2015
- USA FAA UAS Remote Pilot, 2018

Speaking Engagements and Professional Presentations

- [*DARPA/UCI Workshop on Mobile and Intelligent Sensor Networks \(Invited\)*](#), UC Irvine, Irvine CA, February 2016
- [*The Global Sensor Web: A Platform for Citizen Science \(Invited\)*](#) , Co-author, American Geophysical Union, Fall Meeting, San Francisco 2013
- *Android & Cosmic Rays* , *Android – 101*; and, SoCal Code Camp @ USC October 2012
- *Android –101*, SoCal Code Camp @ USD June 2012
- *Android & Cosmic Rays* , and *Android – 101*, SoCal Code Camp @ CS Fullerton 2012
- *Android & Cosmic Rays* , *Android – 101*; and *Fireside Chat on Android*, SoCal Code Camp @ USC October 2011
- *Android – 101*, SoCal Code Camp @ USD, June 2011
- *Android – 101*, SoCal Code Camp @ CS Fullerton, January 2011
- **** Most attended presentation of the conference.**
- *Beginning Android Application Development*, SoCal Code Camp @ USC November 2010
- *Overview of Android and the Mobile Market*, Orange County JUG, March 2010
- *Android – 101*, and *Android Application Development*, SoCal Code Camp @ CS Fullerton, January 2010
- *Android – 101*, and *Android Application Development*, SoCal Code Camp @ USC November 2009
- *Android – 101*, Los Angeles JUG, December 2008
- *Android – 101*, Orange County JUG, November 2008
- *Intro to Android Development*, SoCal Code Camp @ USC, November 2008
- *Embedded Java Application Development*, SoCal Code Camp @ CS Fullerton, January 2007
- [*Embedded Java: Chips, Javelins and Robots*](#), Orange County JUG, June 2005.
- [*JUnitDoclet: A Simple Open Source Tool to Generate JUnit Test Cases*](#), Phoenix JUG, March 2005
- [*Embedded Java: Chips, Javelins and Robots*](#), Phoenix JUG, June 2004.
- [*Beyond MIDP for Palm Devices*](#), Phoenix JUG, April 2004.
- [*Introduction to J2ME Programming*](#), Tucson JUG, December 2003.
- [*Introduction to J2ME Programming*](#), Phoenix JUG, June 2003.

Publications

[Particle Identification In Camera Image Sensors Using Computer Vision,](#)

Astroparticle Physics, Volume 104, January 2019

We present a deep learning, computer vision algorithm constructed for the purposes of identifying and classifying charged particles in camera image sensors. ...

[The particle detector in your pocket: The Distributed Electronic Cosmic-ray Observatory,](#)

IRC 2017, Busan Korea

The total area of silicon in cell phone camera sensors worldwide surpasses that in any experiment to date. Based on semiconductor technology similar to that found in modern astronomical telescopes and particle detectors, these sensors can detect ionizing radiation in addition to photons. ...

[Detecting particles with cell phones: the Distributed Electronic Cosmic-ray Observatory,](#)

ICRC 2015, Den Haag, Netherlands

In addition to their primary purpose of detecting photons, camera image sensors on cell phones and other ubiquitous devices such as tablets, laptops and digital cameras can detect ionizing radiation produced by cosmic rays and radioactive decays. ...

[Measurement of cosmic-ray muons with the Distributed Electronic Cosmic-ray Observatory, a network of smartphones,](#) Journal of Instrumentation, Volume 11, April 2016

Solid-state camera image sensors can be used to detect ionizing radiation in addition to optical photons. We describe the Distributed Electronic Cosmic-ray Observatory (DECO), an app and associated public database that enables a network of consumer devices to detect cosmic rays and other ionizing radiation. ...

[Data Management and Storage Solutions: Backup, Archival and HSM](#)

Sun Microsystems February 1998, Technical White Paper.

[Capacity Planning, Configuration and Tuning High Performance Backup and Recovery for the Datacenter,](#)

Sun Microsystems February 1998, Technical White Paper.

[Sun Microsystems Ultra Computing Workstation Reviewers Guide](#)

Sun Microsystems November 1997, Technical White Paper.

[Client-Server Applications Under SVR4,](#) UNIX Review February 1992

This article discusses the new networking architecture and features in UNIX System V Release 4.0, including: using network selection; using name-to-address mapping; configuring port monitors; the Network Listener Protocol Server; using loop-back transports; and putting it all together writing network client-server applications.

[Gently Down the STREAMS,](#) UNIX Review, September 1991

This article discusses the use of STREAMS facilities in UNIX System V Release 4.0 for user-level applications. It includes: STREAMS pipes; priority messages; polling for events; and an example of using a special STREAMS module suited for a client-server application.

Publications (cont.)

[Seeing it the Hard Way.](#) UNIX Review, July 1991

This article discusses the nebulous but feature-full printing sub-system in UNIX System V Release 4.0, including: the basic design of the system; administration and networking issues; postscript support; and, how to use the system.

[Pearls from the ABI](#) UNIX Review, May 1991

This article discusses Dynamic Shared Libraries in UNIX System V Release 4.0, including: why to use them; when to use them; performance and portability considerations; and, how to build them.

[Two Sound Technologies.](#) UNIX Review, March 1991

A comparison of NFS and RFS technologies. The article discusses the basic internal design and file semantics that each provides as well as situations where the usage of one may be more appropriate than the other.

[A Teachable, Adaptable Conversational System.](#)

Proc. Xth International Congress on Cybernetics, Namur, Belgium, August 1983

This paper discusses the implementation of a unique technique for natural language processing and response generation based on word association and ``bootstrap'' learning. (Published as an undergraduate.)