



Todd Duncan *Software Engineer*

About Me


I am a well rounded “jack of all trades” developer with over 20 years of professional experience. From pyrotechnic systems to front end UX development to highly efficient multi threaded server code I do it all. I excel in writing elegant and efficient back end code and optimizing existing systems. I have expertise in leadership, conflict resolution, team building & facilitation techniques. Most importantly I care about my work and strive to improve our quality of life through it. I bring balance to my life as an acrobat, yogi, athlete, outdoors man, and handyman.

Education

1997 - 1999
Master of Computer Science
Georgia Institute of Technology
Atlanta, Georgia

1992 - 1997
Bachelor of Computer Engineering
Auburn University
Auburn, Alabama

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 yogatodd.com

Expertise

Languages

Java 

UNIX Scripting 

Databases / SQL 

Hard Skills

Data Structures / Algorithms 

VCS (git, subversion) 

Testing 

User Experience Design 

Soft Skills

Leadership 

Collaboration 

Critical Thinking 

Professional Experience

2019 - Present

JT IoT

Owned the research, development, and testing of new integration with Verizon using RESTful interfaces. Instrumented code base with AspectJ to peek into system performance, discovered & fixed countless production bugs and flaws. Advocated for sorely needed, nonexistent code reviews and improved inter-team communication. Made multiple UX improvements to existing sites. Organized new social events.

2007 - 2019

Independent Contractor

Created Spring Boot web apps, smart phone apps, & stand alone programs. Android apps written using CodenameOne include PDK Watch & ClientTracker. Desktop programs written using JavaFX and Swing include pyrotechnic and special effects control systems, noise monitoring, music visualization, and fitness studio management software.

2005 - 2007

SecureWorks

Rearchitected security event handler to more efficiently process events in real time. Optimized existing software deployment system yielding about a 10x performance gain (run time reduced from 1½ hours to 10 minutes).

1999 - 2005

Z-Tel / Trinsic Communications

Primarily a middleware developer, wrote internal APIs connecting telephony switches to databases and web pages. Major optimization of existing phone call handling quadrupling existing call load capacity saving the company millions in server costs. Wrote a CLI Java scripting language (real time, no compile) becoming a company standard for integration and testing.

1997 - 1999

Third Millenium Communications

Contracted out to The Bankers' Bank to rewrite their existing COBOL WYSE terminal system into a much nicer Java Swing system.

Hobbies & Interests

Acroyoga/Acrobatics, Yoga, Hiking, Kayaking, Cycling, Piano, Guitar, Gaming (card, board, & computer), Ping Pong, Learning Danish.

Detailed Work History

2019 - Present

JT IoT

Senior Software Developer
Copenhagen, Denmark

- Full stack development, wrote 60+ scripts to optimize workflows (more than doubling performance), integrated with multiple Telco's (REST & SOAP), designed new Real Time Rating system, improved design and consistency of UX, found and fixed numerous undiscovered bugs, coached employees, organized new team building social events.
- Technologies: Java, REST, SOAP, Oracle, UNIX, GWT, Docker, Kubernetes, bash, perl, git

2007 - 2019

Independent Contractor

Atlanta, Georgia

The following itemizes the contracts & projects during this time period:

2019

Noise Monitor

- Wrote a program with Java and JavaFX to monitor noise levels. Ideal for teachers and parents this software uses a simple stoplight metaphor to report when it gets too loud (green is good, yellow is a warning, red is too loud).

2018

TestMaker

- Used Java, Spring Boot, Hibernate, MySQL, and Vaadin to develop web app allowing professors to create tests with variable questions & answer equations generating randomizable tests to eliminate cheating.

2017

MKP USA

- Used Java, Spring Boot, Hibernate, Postgres, Quartz, and Vaadin to develop web app to orchestrate and schedule events. Configurable automated emails are delivered to collaboratively schedule and confirm meetings.

2016

ClientTracker App

- Developed Android app to track time and/or money spent with clients (and associated financial accounting) using Java, Apache Derby, and CodenameOne. App is designed for broader use cases; it tracks credits and debts, loans, can be used as an itemized todo list, and more.

2015

PDK Watch App

- Created Android and iOS app (PDK Noise Report) to support neighboring communities communications with the airport. Written in Java and PHP using CodenameOne this app allows people to file noise complaints quickly and easily. The airport gathered 10 times more data and saw improved communication with the community.
- Integrated an SPL (sound pressure level meter) using Python to track high noise events of low flying aircraft. Integrated a RealTek SDR (software defined radio) tuned to listen to ADS-B data from local aircraft using Java to gather relevant aircraft positioning data. Wrote UNIX scripts to coordinate, parse, and graph this data for greater airport transparency in its noise reporting with the community.

2013 - 2014

PrIDI

- Authored music visualization software for Autistic children. Using MIDI inputs the software maps notes to shapes of varying color, location, and size using JavaFX and Swing. Since sound alone did not fully engage them the visual stimulation helped increase interest in music while calming the children. (Other music visualization software was found to be too overstimulating.) PrIDI provided additional benefits to musicians; they can better see note and chord patterns and progressions.

2008 - 2013

BurnTec

- Developed iOS and Android app to interface with and control a car's dashboard. Replaced air and radio controls, added LED lighting controls, added mapping, etc. using Java.
- Developed a visual effects interface for persistence of vision displays (POV) in Java using Swing. Developed numerous graphics effect patterns for the display. The POV displays were comprised of a long (4') vertical strip of RGB LEDs spinning around the perimeter of a cylinder at high enough rate of speed (600 rpm) to create a holographic cylindrical display "screen." (Like a straw circling around a tall glass.) Challenges included physical data throughput through high speed revolving contacts, display synchronization, and data compression / UDP issues in congested WiFi networks.
- Developed pyrotechnic control software and real time audio processing algorithms for beat detection to drive flame effects from music in Java / Swing. Imaging a graphic equalizer where the bars are flames. A major hurdle was the physical delay in releasing and igniting propane quickly. The software had to predict likely beats on multiple frequencies about ~100ms *before* they happened to synchronize fire with sound.

2006 - 2008

Yoga Software Manager

- Authored and maintained a feature rich application for managing a yoga studio. With over 40,000 lines of custom code this 100% Java software integrates with an embedded Apache Derby database and has fully transparent configurable Swing components. It tracks students, their histories, teachers, classes, scheduling, and financial accounting data. It includes a suite of printable reports and graphs. Challenges included creating a transparent, automatic, on and offline database backup system with version control; acting as both project manager, sales manager, and developer; bridging the language gap between yoga teacher and software engineer. Satisfied customer needs without overburdening them with technical jargon.

2005 - 2007

SecureWorks

Senior Software Engineer
Atlanta, Georgia

- Created a company wide re-architecture to better handle security events in a streamlined, scalable pipe.
- Developed a security event pattern detector/filter and interface in Java to efficiently and in real time modify and process rules based detection.
- Optimized existing software deployment systems; the 1.5+ hour long security rule set deployment now runs in 10 minutes saving the company both time and money.
- Technologies: Java, PHP, subversion

1999 - 2005

Z-Tel / Trinsic Communications

Software Engineer
Atlanta, Georgia

- Developed and maintained software at all enterprise levels from the backend databases, through the middleware, into the telephony controls, and lastly to the user on the phone. Technologies: Java, Oracle, Novell, VXML, JSP, RMI, JNI, LDAP, Dialogic API, XSLT, Weblogic J2EE, Apache, ClearCase, bash/perl scripting and Excel switches.
- Major performance enhancing redesign/rewrite of existing Java/C++ telephony code. Interfaced with Dialogic DLL's using JNI and created a highly multithreaded resource sharing mechanism quadrupling existing performance and call load capacity saving the company millions in server costs.
- Developed multiple full stack special purpose Java programs for system monitoring, call tracing, and maintenance.
- Wrote a real time no compile Java command line interpreter scripting language. Effectively a simplified version of Java 9's jshell 15 years before it existed. This tool became a standard for the company for testing middleware and other methods.
- Maintained and configured development, QA, and production environments.
- Developed and maintained several UNIX scripts (statistical gathering, database/file system comparison/sync, etc.) becoming standard company tools using bash, perl, awk, sed, etc.
- Responsible for 24x7 on-call duties