ROY WATSON

Senior Android Developer
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PROFESSIONAL SUMMARY

Senior Android Developer with over 15 years of expertise in crafting innovative solutions within the Android ecosystem. Highly proficient in leveraging advanced technologies such as Jetpack Compose, Kotlin, and NDK/C++ to optimize performance and enhance user experiences. Passionate about mentoring teams and driving technological advancements, with a proven track record of delivering high-impact projects across diverse industries.

SKILLS

Android SDK, Kotlin, MVVM, Kotlin Multiplatform, Java, Jetpack, Compose, Coroutines, Room database, Reactive Programming (Flows/RxJava), Dependency Injection (Koin, Dagger/Hilt), NDK/JNI, C++, Unit and UI testing (e.g. Espresso, Appium, Browserstack), Exoplayer, GraphQL, REST, Docker, Golang, Bluetooth/BLE, AWS, FFmpeg, PostgreSQL, MySQL, Python, Node.js, Linux, Windows, iOS Development, IoT, Raspberry Pi, Embedded Development ... and more.

OTHER SKILLS & TOOLS

Android Studio, JetBrains All Products Pack Subscription, Appium, Wireshark, Charles, Git, GitHub, Jira, Confluence, Figma, Slack, MS Visual Studio, Xcode ... and more.
Leadership, Mentoring, Teamwork, Team building, Communications, Time management

LINKS

LinkedIn: https://www.linkedin.com/in/roywatson3
GitHub: https://github.com/roywatson

My Personal Android Applications:
https://download.roywatson.com/Roy_Watson--Project_History_va.pdf

EDUCATION

Purdue University* - Physics** ***West Lafeyette, Indiana
Work Study: Programming of dual computers controlling a 100m Van de Graaff linear particle accelerator for high-energy physics research

ADDITIONAL INFORMATION

Member of Mensa • FCC Licensed Amateur Radio Operator • Sailor • Scuba Diver • Pilot

MOST RECENT EXPERIENCE

CONTRACT SENIOR ANDROID DEVELOPER **Nov 2024 – Aug 2025**
Auddia, Inc
I developed a very large audio processing Android library in C/C++ using the Android NDK to optimize performance and memory footprint. The library performed sophisticated DSP functions including Fourier Transforms to fingerprint and analyze incoming audio. The analysis included matrix math which I was able to optimize by employing hardware acceleration via the NEON instruction set in most modern Arm processors. Of course, the code fell back to software matrix math in the absence of these hardware capabilities. To ingest the audio data, I cross compiled a custom suite of FFmpeg libraries.

CONTRACT SENIOR ANDROID DEVELOPER **Sep 2022 – June 2025**

New York Public Library

I developed an Android book reader app to replace their existing legacy app. I utilized Jetpack Compose and the open-source library called Readium. I was also involved in testing using unit tests, instrumented tests and Appium using Webio drivers for automated testing in the cloud.

CONTRACT SENIOR ANDROID DEVELOPER **Nov 2020 – Sep 2022**

Help-On

I extended Android's VPNService to a custom service that redirects network traffic to their in-house proxy servers. I was responsible for the underlying network code that intercepted DNS and streaming traffic, repackaged them, forwarded them and unpackaging the responses.
I ported an Android App to Android TV and Fire TV. I lead a team of Android developers expanding a video streaming utility app and porting it to Android TV and Fire TV and FireOS apps. The existing legacy code was Java; our new code was added in Kotlin and Jetpack libraries with coroutines. I implemented push notifications on both Android and FireOS devices utilizing AWS SNS to provide the client with a single point of transmission.

I ported a legacy PHP server code to Golang (Go Language) microservices and created Docker containers that virtualized them in Google Cloud Services.

CONTRACT LEAD ANDROID DEVELOPER **Jun 2018 – Nov 2020**

Bechtel Corp

Served as Lead Android Developer managing a team of Android developers designing and developing an internal project management app for a world leading construction company. The app leverages most of Google's newest Android technologies. The app is written in Kotlin using two-way data binding, Live Data and other newest techs. The app communicates with multiple cloud servers using a combination of Apollo/GraphQL and REST service calls.

CONTRACT LEAD ANDROID/BACKEND/EMBEDDED DEVELOPER **Apr 2014 – Jun 2018**

Goodyear Tire and Rubber, Inc

Designed and developed a client/server system to manage the fleet of vehicles that service large, localized operations. The system uses in-cab Android devices to report position and telemetry to a server, in real-time, via cellular networks. The system coordinates traffic to avoid resource conflicts and bottlenecks. The system aids in maximizing production while minimizing the consumption of fuel, as well as brake and tire wear. The system provides real-time feedback to the drivers to encourage optimum behaviors. Administrators can remotely view vehicle specific data in real-time on a web-based map display and monitor driver performance.

CONTRACT LEAD ANDROID DEVELOPER **Aug 2012 – Apr 2014**

Neya Robotics Systems, Inc

Developed an Android app that Streams "zero latency" real time video and audio for military applications. The app encodes video using H.264 video compression using the open source x264 video encoder. Streaming is accomplished using the Live555 open-source library. Incoming video is decoded using the FFmpeg library which is also open source. All the open-source libraries were ported to Android using the Android NDK (Java's JNI) for C/C++ development. The video encoding used advanced features of the h.264 standard to create a low and consistent (flat) bandwidth for transmission over slow media (i.e. long-range RF).

CONTRACT LEAD MOBILE DEVELOPER **Oct 2009 – Aug 2012**

Confidential Client under US Govt contract

Mobile Navigation for Maritime and Aeronautical applications.

Developed mobile nautical and aeronautical navigation systems on Android, Windows Mobile and iOS (iPhone and iPad). Involved decoding relatively complex file formats and high-performance graphics display algorithms in C/C++. Utilized sensor data such as GPS and compass for location and orientation information.