

## SOFTWARE ENGINEER

## JONATHAN TROWBRIDGE

### EDUCATION

**B.S. COMPUTER SCIENCE | VIRGINIA COMMONWEALTH UNIVERSITY '13**

### QUALIFICATIONS

<b>Languages:</b>	C#, Kotlin, Java, TypeScript, JavaScript, T-SQL, PL/SQL, HTML5/CSS3
<b>Frameworks:</b>	ASP.NET, ASP.NET Core, Xamarin, Angular, React
<b>Platforms:</b>	Android, iOS, Windows, Linux, Web
<b>Databases:</b>	Microsoft SQL Server, PostgreSQL, MongoDB
<b>Source Control:</b>	Git, Subversion
<b>IDEs:</b>	Visual Studio, Android Studio, Xcode, Rider, WebStorm, Vim
<b>Certifications:</b>	Microsoft Xamarin Certified Developer

### WORK HISTORY

#### **SOFTWARE ENGINEER | MAPLETON HILL MEDIA | BOULDER, CO | AUG. '16 – FEB. '18**

- Developed complex iOS and Android mobile applications using Microsoft Xamarin framework
- Implemented multifaceted ASP.NET Web APIs to back mobile applications and synchronize data between devices
- Worked primarily with databases backed by Microsoft SQL Server and commonly wrote queries, triggers, and stored procedures
- Wrote expressive LINQ queries varying from simple data manipulation to complex parallelized asynchronous tasks interacting with various APIs
- Migrated parts of large, dated, monolithic APIs to smaller more manageable single responsibility services backed by unit tests
- Worked as part of a small, four-person team, to develop the Aspen Snowmass cross-platform mobile application
- Developed various types of applications, including, but not limited to: skiing, agriculture, inventory, and shipping

#### **APPLICATION DEVELOPER | WORLDVIEW SOLUTIONS | RICHMOND, VA | FEB. '13 – FEB. '16**

- Created a Watershed Pollution Management module for the Virginia Department of Environmental Quality using Backbone, Marionette, and ASP.NET Web API
- Developed a resource conservation management planning module for the Best Management Practice Tracking application utilized by the Virginia Department of Conservation and Recreation
- Implemented a complex claims-based authentication workflow that is utilized within the Storm Water Construction General Permitting application for the Virginia Department of Environmental Quality

- Created a claims-based user management web portal for a recruiting application utilized by the Air Force
- Worked as part of a team to develop a land and water resource planning software called Practice Keeper
- Migrated a non-profit website used to promote exercise in K-12 students from jQuery to Dojo

#### **SOFTWARE DEVELOPER | GALLIUM TECHNOLOGIES | RICHMOND, VA | APR. '12 – FEB '13**

- Developed, documented, and deployed features into an existing MVC web application
- Updated legacy components for compliance with current web standards
- Maintained and administered a PostgreSQL database

#### **ADMINISTRATIVE ASSISTANT | MARFAIR JOINT VENTURE | D.C. | MAY '11 – AUG '11**

- Invoiced tenants and helped with updating tenant records
- Property and account management

#### **QUALITY ASSURANCE INTERN | PREMATIC INC. | VIENNA, VA | JUL. '08 – DEC. '08**

- Developed unit tests using Perl and the Selenium browser automation framework
- Managed, updated, and added customized Python plugins for their Trac system

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### **SIDE PROJECTS**

#### **BIT CAST | ANDROID APP**

- Follows recommended Android architecture by utilizing Android Jetpack Architecture Components
- Media playback powered by a custom wrapper of the VLC libVLC library
- Implements anonymous crash reporting and analytics
- Uses Kotlin coroutines for asynchronous operations
- Query for torrents within the app
- Play media locally or cast it to Chromecast devices
- Begin video playback before media finishes downloading
- Support for all magnet links and .torrent files
- Query for and apply subtitles of multiple languages in the local media player
- Free and available on the Play Store

#### **SIMPLE BARCODE SCANNER (WIP) | ANDROID APP**

- A barcode scanner powered by ML (machine learning) Kit by Google
- Primary goal of the project was to learn about Google AdMob integration
- Uses Material Design Components by Google
- Utilizes RxJava for expressive asynchronous operations
- Free and paid version (not currently on Play Store)

#### **SIMPLE VLC PLAYER | ANDROID LIBRARY**

- Significantly expands the types of media that can be played on Chromecast devices
- Provides custom local media player and Chromecast controller
- Manages media playback service for consumers of the library to keep streams alive
- Integrates the Open Subtitles API to support subtitles in multiple languages and encodings

- Powered by libVLC and written in Kotlin and Java

#### **SIMPLE TORRENT ANDROID | ANDROID LIBRARY**

- Supports sequential downloading of torrent pieces to help facilitate streaming
- Can download torrents via magnet URIs or .torrent files
- Written in Kotlin and powered by frostwire-jlibtorrent

#### **FFMPEG GLIDE VIDEO DECODER | ANDROID LIBRARY**

- A Glide resource decoder powered by FFmpegMediaMetadataRetriever
- Expands support for extracting thumbnail images from media types not supported by Android

#### **THE PIRATE BAY SEARCH ANDROID | ANDROID LIBRARY**

- A simple library for simultaneously querying The Pirate Bay and its various proxies
- Library utilizes Kotlin coroutines to parallelize web requests to ensure fast, accurate results

#### **OPEN SUBTITLES ANDROID | ANDROID LIBRARY**

- An Android client library for the opensubtitles.org REST API
- Supports querying for and downloading of subtitles

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#### **REFERENCES**

**Jason Timbo – COO and Co-founder of Mapleton Hill Media**

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