SHAWN WITTE

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RESEARCH AND PROJECTS

HoloCanon: An Unofficial Star Wars Canon Tracker
Android App

- Holocanon is an Android app that I wrote from scratch to keep track of all existing canonical Star Wars content and which pieces I have read or watched so I can easier select books at the library.
- The user is able to filter and sort media by various methods including by user-defined checked items.
- The app is written with Model-View-ViewModel (MVVM) architecture using Room to persist the Model layer locally as an SQL database and using Dagger 2 as a dependency injection framework.
- The codebase is a combination of Java and Kotlin, making use of Kotlin's coroutines.
- Future plans for the app include expanding to iOS using Kotlin Multiplatform, and implementing a more robust API using Ktor.
- Most recent codebase can be found at https://github.com/Minirogue/SWMediaTracker. The published app can be found on the Google Play store at https://play.google.com/store/apps/details?id=com.minirogue.starwarscanontracker.

Computational Knot Theory Research
PhD Research

- Used statistical and logical reasoning to provide evidence and prove conjectures regarding discrete representations of knots and links.
- Designed and implemented data structures to represent grid diagrams of knots and links as well as perform Markov chain simulations in Python.
- Converted the entire codebase to Java/Kotlin and abstracted the Markov chain framework.
- Mentored undergrads in mathematics, the implementation of Markov chain algorithms, and general coding practices.
- Project code can be found at https://github.com/Minirogue/GridDiagramsJava.

TECHNICAL SKILLS

Python, Java, Kotlin, HTML, CSS, LaTeX, object oriented programming (OOP), app architecture (MVP, MVVM), Android development, dependency injection (Koin, Dagger 2), unit testing (JUnit), Gradle, concurrency (Kotlin coroutines), Git, SQL, continuous integration/deployment (CI/CD).

EDUCATION

University of California, Davis 2019
PhD, Mathematics *3.75/4.0 GPA*

Central Michigan University 2013
Master of Arts, Mathematics *3.8/4.0 GPA*

Central Michigan University 2010
Bachelor of Science, Mathematics *3.9/4.0 GPA*

EMPLOYMENT

Android Developer 2020–current
Stride Health *San Francisco, California*

- Worked on the Stride mileage, expense, and tax tracker app for Android.
- Promoted use of Kotlin coroutines with best practices.
- Helped introduce rigorous unit testing standards.
- Rewrote the drive recording engine.

Associate Instructor/Teaching Assistant/Research Assistant 2013–2019
University of California *Davis, California*

- As instructor of record, responsibilities included lesson planning, lecturing, creating quizzes and exams, submitting final grades, and holding office hours for calculus for biology and medicine (Summer 2014, Summer 2015) and short calculus (Fall 2014). For all other quarters I have either been funded for research or working as a teaching assistant for various upper and lower division courses with the following duties: grading homework, quizzes, midterms, and final exams, holding office hours, and running weekly discussion sections.