

# SHAWN WITTE

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 [Minirogue.github.io](https://github.com/Minirogue) ·  [/in/shawn-witte](https://in/shawn-witte)

 [@Minirogue](https://twitter.com/Minirogue) ·  [github.com/Minirogue](https://github.com/Minirogue)

## RESEARCH AND PROJECTS

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### HoloCanon: An Unofficial Star Wars Canon Tracker

1 Year

*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.
- The codebase is a combination of Java and Kotlin, making use of Kotlin's coroutines.
- Koin is currently used for dependency injection.
- Future plans for the app include replacing Koin with the more widely used Dagger 2, implementing a REST API in conjunction with Retrofit for more robust updating of the database, and expanding the sorting and filtering options.
- 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

5 Years

*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

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Python, Java, Kotlin, HTML, CSS, L<sup>A</sup>T<sub>E</sub>X, object oriented programming (OOP), Model-View-ViewModel (MVVM) app architecture, Android development, dependency injection (Koin), unit testing (JUnit), Gradle, concurrency (Kotlin coroutines), Git, SQL, convolutional neural networks (CNNs).

## EDUCATION

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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

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### **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.

### **Teaching Assistant**

2011–2013

*Central Michigan University*

*Mt. Pleasant, Michigan*

- As instructor of record, responsibilities included lecturing, assigning homework, writing and grading quizzes and exams, holding office hours, tutoring in the Math Assistance Center, and assigning grades for the following courses: intermediate algebra, plane trigonometry, and business calculus.

## GROUPS

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### **Galois Group**

2013 – Present

*University of California*

*Davis, CA*

- Member of student group for the graduate mathematics and applied mathematics programs. Served as treasurer in the 2016/2017 academic year.

### **Sensual Daydreams Rocky Horror Shadowcast**

2015 – Present

*University of California*

*Davis, CA*

- Acted out a role from “Rocky Horror Picture Show” three times a year for an interactive audience. Served as treasurer in the 2016/2017 academic year.

### **Association for Women in Mathematics (AWM)**

2016 – Present

*University of California*

*Davis, CA*

- A founding member of the UC Davis AWM student chapter. Served as treasurer in the 2016/2017 academic year.

## LANGUAGES

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### **Native**

English

### **Studied**

German, Japanese, American Sign Language