

# SHAWN WITTE

[shawn.l.witte@gmail.com](mailto:shawn.l.witte@gmail.com) · Davis, California

Personal Website · <http://minirogue.github.io>

## EDUCATION

---

<b>University of California, Davis</b> <i>PhD, Mathematics</i>	2019 3.75/4.0 GPA
<b>Central Michigan University</b> <i>Master of Arts, Mathematics</i>	2013 3.8/4.0 GPA
<b>Central Michigan University</b> <i>Bachelor of Science, Mathematics</i>	2010 3.9/4.0 GPA

## TECHNICAL SKILLS

---

Python, Java, Kotlin, HTML, CSS, L<sup>A</sup>T<sub>E</sub>X, object oriented programming (OOP), MVVM, Android Development, dependency injection (Koin), concurrency (coroutines), Git, SQL, convolutional neural networks (CNNs).

## RESEARCH AND PROJECTS

---

**HoloCanon: An Unofficial Star Wars Canon Tracker** 1 Year  
*Android App*

- Created and currently manage an online database of canonical Star Wars material along with metadata.
- Used room library to manage the user's local database, which is regularly synchronized to the online database.
- Implemented multiple filters and sorting methods including by user-defined properties.
- Designed UI, implemented MVVM structure.
- Engaged with users to develop improvements to the app.
- Published on Google Play app store.
- Code at <https://github.com/Minirogue/SWMediaTracker>.

**Computational Knot Theory Research** 5 Year  
*PhD Research*

- Used statistical and logical reasoning to provide evidence and prove conjectures regarding discrete representations of knots and links.
- Developed data structures to represent grid diagrams of knots and links in Python.
- Wrote an implementation of the Wang-Landau Markov chain algorithm for grid diagrams, also in Python.
- Optimized and converted code to Java.
- Mentored undergrads in the implementation of Wang-Landau for other representations of knots and links.
- Java code can be found at <https://github.com/Minirogue/GridDiagramsJava>

## EMPLOYMENT

---

### **COSMOS Teaching Assistant**

2018

*University of California*

*Davis, California*

- Assisted in lessons for California State Summer School for Mathematics and Science (COSMOS). Led discussion about knot theory and aided students in their 4-week long projects.

### **Associate Instructor/Teaching Assistant/Research Assistant**

2013–present

*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

---

### **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

---

### **Native**

English

### **Studied**

German, Japanese, American Sign Language