# Andrew Aguilar

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## Education

**University Washington, Seattle, WA** *Sept 2022 – Current*

*PhD in Mathematics* *Ongoing*
*M.S. in Mathematics* *Fall 2024*
- GPA: 3.85/4.0

**Cal Poly Pomona, Pomona, CA** *Sept 2017 – May 2021*
*B.S. in Applied Mathematics*
- GPA: 3.77/4.0

## Research

**Modular Representation Theory** *Seattle, WA*
*PhD Research* *Ongoing*
- Advisor: Julia Pevtsova

**NSF PUMP-URG program** *Pomona, CA*
*Undergraduate Research* *Fall 2020 - Spring 2021*
- Advisor: Fernando López-García (CPP)
- An application of the discrete weighted Hardy Inequality on trees to the Friedrichs' Inequality on a fractal domain.

**REU at UC Santa Barbara** *Virtual*
*Undergraduate Research* *Summer 2020*
- Advisor: Zhirayr Avetisyan (UCSB)
- Project 1: Topological properties of almost abelian Lie groups, their Lie algebras, subgroups and homogeneous spaces
- Project 2: Properties of the adjoint operator of almost abelian Lie algebras on the space of orbits of systems of linear differential equations

**Math Education** *Pomona, CA*
*Undergraduate Research* *Summer 2019*
- Advisor: Fernando López-García (CPP)
- We developed and studied the use of sophisms in undergraduate calculus courses to develop understanding of concepts and mathematical communication.
- The sophisms developed have seen continued use in the calculus curriculum at Cal Poly Pomona.

## Teaching

**Graduate Teaching Assistant** *Pomona, CA*
*University of Washington*
- MATH 124: Differential Calculus *Fall 2022 - Summer 2023*
- MATH 125: Integral Calculus *Fall 2023*
- MATH 124: Multivariable Calculus *Winter 2024*
- MATH 125: Integral Calculus *Spring 2024-Winter 2025*

**Graduate Teaching Associate** *Pomona, CA*
*Cal Poly Pomona*
- Instructor of record for introductory math courses.
- Modalities included both in person and virtual.

- ○ MATH 1050: College Algebra *Fall 2021*
- ○ MATH 1060: Trigonometry *Spring 2022*

**Tutor and Supplemental Instruction** *Walnut, CA + Virtual*
*Mount San Antonio College* *Fall 2018 - May 2022*

- ○ Tutor for math, statistics, physics, and chemistry in the ASAC & MARCs tutoring centers.
- ○ Supplemental instructor for math, physics and chemistry.

**Upper Division Math Tutor** *Virtual*
*Cal Poly Pomona* *Spring 2021*

- ○ Tutor in the Cal Poly Pomona LAC for upper division math courses
- ○ Courses include: Intro to Proofs, Abstract Algebra, Real analysis, Graph Theory, Numerical Analysis, Computational Methods (MATLAB), Probability/Statistics and introductory math courses

## Conferences and Presentations

**UW Math - 123 Seminar** *Winter 2024*
*Presentation talk: When do Lie Algebras lie? (Algebra of Distributions for Affine Group Schemes)*
**UW Math - Back to school seminar** *Fall 2024*
*Presentation talk: Étale group schemes and Duality*
**Cal Poly Pomona RSCA Conference** *Spring 2021*
*Presentation talk: An Application of the Weighted Discrete Hardy Inequality on Trees to the Friedrichs Inequality on a Fractal Domain*
**CPP Math student colloquium series** *Fall 2020*
*Presentation talk: Topological properties of almost abelian Lie groups and homogeneous spaces*
**Young Mathematicians Conference** *Summer 2020*
*Presentation talk: Topological properties of almost abelian Lie groups and homogeneous spaces*
**Cal Poly Pomona RSCA conference** *Spring 2019*
*Poster Presentation: Sophisms and Erroneous Resolutions*

## Extracurricular and Outreach

**Washington Directed Reading Program Organizing Committee** *Winter 2024*- Current
- ○ Treasurer for the UW WDRP

**Graduate TA training mentor** *Fall 2024*
- ○ TA training mentor for UW Math and Applied MATH graduate students

**Washington Directed Reading Program Mentor**

- ○ Directed reading project with undergraduates, as chosen by the graduate student mentor
- ○ Past projects:
    - – Intro to higher math through Polyhedra *Winter 2023*
    - – Representation Theory of Finite Groups *Spring 2023*

**University of Washington Math Circle** *Fall 2023- Spring 2024*
- ○ Instructor for the UW middle & high school math circle

**UW Math Hour Olympiad Judge** *Spring 2023/2024*
- ○ Judge for the yearly UW math Hour Olympiad

**Cal Poly Pomona SEES program mentor** *2019-2022*
- ○ Peer mentor for the SEES program

## Technologies and Languages

**Programs & Languages:** LaTeX, Mathematica, Octave/MATLAB, Python, Microsoft Office

## Honors and Awards

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| **Dean's List & President's List** | 2018 - 2021 |
| **Recipient of the Mr. and Mrs. Keith Soon Kim Scholarship** | Fall 2020 |
| **BAMM! Scholarship Recipient** | 2021 - 2022 |
| **Recipient of the Gloria C. Hewitt Fellowship Award** | Fall 2023 |