

# Nathan Louie

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## RESEARCH INTEREST

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*My interests are broadly in topology, particularly in low-dimensional and algebraic.*

## EDUCATION

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<b>University of Texas Austin</b> <i>Doctor of Philosophy in Mathematics</i>	Austin, TX Aug. 2024 - Present
<b>University of Washington: 3.95</b> <i>Bachelor of Science in Mathematics with Distinction: 3.96</i> <i>Bachelor of Science in Computer Science: 3.91</i>	Seattle, WA Sept. 2021 - June 2024
<b>Seattle Central College: 4.0</b> <i>concurrently with High School under Running Start program</i>	Seattle, WA Sept. 2019 - June 2021
<b>Franklin High School: 4.0</b>	Seattle, WA Sept. 2017 - June 2021

## EXPERIENCE

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<b>WXML Participant</b> <i>University of Washington</i> <ul style="list-style-type: none"><li>Participating in the Washington eXperiment Mathematics Lab. Our project is on the formalization of mathematics using Lean, guided by Professor Jarod Alper. Currently, we worked on formalizing results from quadratic form theory and transfer systems.</li></ul>	Sept. 2023 - March 2024 Seattle, WA
<b>REU Participant</b> <i>Northwestern University</i> <ul style="list-style-type: none"><li>Participated in an eight-week REU on dynamical systems under Professor Aaron Brown funded by NSF RTG. We were able to construct an original smooth Anosov actions on the 3-torus and other nilmanifolds by surface groups, and further explored properties surrounding it. See <a href="#">report</a>.</li></ul>	June 2023 - Aug. 2023 Evanston, IL
<b>Summer School Participant</b> <i>Northwestern University</i> <ul style="list-style-type: none"><li>Attended a two-week summer school on dynamical systems, funded by NSF-RTG and NSF-CAREER. The school included advanced mini-courses and talks on current research in dynamical systems. See <a href="#">content</a>.</li></ul>	June 2023 - June 2023 Evanston, IL
<b>Abstract Algebra Mentor</b> <i>University of Washington</i> <ul style="list-style-type: none"><li>Co-led and mentored a group of undergraduate students in a reading group on Dummit and Foote to prepare them for graduate courses. To continue this reading group with a new set of students this year.</li></ul>	Jan. 2023 - Present Seattle, WA
<b>Content Developer</b> <i>Red Lens Games &amp; Mojang Studios</i> <ul style="list-style-type: none"><li>Designed and implemented modifications packs using JSON with assistance from professionals in the company. Led and directed a team of high-schoolers to brainstorm, implement, and present their own custom packages.</li></ul>	Aug. 2021 - Sept. 2021 Seattle, WA

## ADDITIONAL INFORMATION

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**Outreach:** Meet a Mathematicians Panelist 2024, Math Hour Olympiad Judge 2023 and UW Undergraduate Journal Peer Reviewer 2022-2024.

**Awards:** Dean's Strategic Fellow. 2024, Wisniewski Endowed Sch. 2024, BAVA Sch. 2021-2024, WSOS Sch. 2021-2024, and HS Valedictorian.

**Talks Attended:** UW-PIMS Colloquium Series 2022-2024, and K-OS Knot Online Seminar 2024.

**Programming Skills:** Java, Python, C, C++, SQL, LaTeX, Mathematica, Sage, GAP, and Lean.

**Languages:** English *native*, Cantonese *native*, Japanese *intermediate*.