# Niven Achenjang


**Contact Information**

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**Education**

**MIT** **2020 – Present**
PhD Candidate, Mathematics
Advisor: Bjorn Poonen

**Stanford University** **2016 – 2020**
B.S. Mathematics

**Publications/ Preprints**

1. N. Achenjang, On Brauer groups of tame stacks, *preprint (arXiv:2410.06217).* (2024)
2. N. Achenjang, D. Bhamidipati, A. Jha, C. Ji, and R. Lopez, The Brauer group of $\mathscr{Y}_0(2)$, *preprint (arXiv:2311.18132).* Submitted. (2023)
3. N. Achenjang, The Average Size of 2-Selmer Groups of Elliptic Curves in Characteristic 2, *preprint (arXiv:2310.08493).* Submitted. (2023)
4. N. T. Achenjang, J. S. Morrow, Integral Points on Varieties With Infinite Étale Fundamental Group, *International Mathematics Research Notices*, Volume 2024, Issue 10, May 2024, Pages 8157 – 8171.
5. N. Achenjang and A. Berger, On gaps in the closures of divisor functions, *International Journal of Number Theory.* **15** (2019), 1023 – 1036.

**Seminar Organizing**

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| Fall 2023 | *Organizer*, Modularity/Fermat Seminar. |
| Spring 2022 – Fall 2023 | *Co-organizer*, Seminar on Topics in Arithmetic, Geometry, Etc. (STAGE) |

**Teaching Experience**

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| Fall | 2024 | GUMMI Mentor | MIT Grad-Undergrad Math Mentoring Initiative |
| March | 2024 | Study Group Leader | Arizona Winter School |
| January | 2024 | DRP Mentor | MIT's Directed Reading Program |
| Fall | 2023 | Teaching Assistant | MIT 18.06 (Linear Algebra) |
| January | 2023 | DRP Mentor | MIT's Directed Reading Program |
| Fall | 2022 | Teaching Assistant | Preliminary Arizona Winter School |
| January | 2022 | DRP Mentor | MIT's Directed Reading Program |
| July | 2021 | Teaching Assistant | Park City Math Institute Undergraduate Session |
| January | 2021 | DRP Mentor | MIT's Directed Reading Program |
| Fall | 2019 | Teaching Assistant | Euler Circle Cryptography Class |
| Summer | 2019 | Teaching Assistant / Residential Counselor | Stanford University Mathematics Camp (SUMaC) |
| Spring | 2018 | Tutor | Stanford Math 122: Modules and Group Representations |
| Winter | 2018 | Grader | Stanford Math 62DM: Modern Mathematics: Discrete Methods |
| Summer | 2016 | Residential Counselor | VAMPY/SCATS Summer camps |
| Winter | 2015 | Teaching Assistant | High-school Calculus |

## Honors and Awards

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| 2020 – 2023 | *MIT Dean of Science Fellowship* |
| 2020 – 2025 | *National Science Foundation Graduate Research Fellowship* (NSF GRFP) |
| 2020 | *Undergraduate Research Award* for my senior thesis. |
| 2017 | *Code2040 Fellow* |
| 2016 | *SanDisk Scholarship* |
| 2016 | *National Merit Finalist* |
| 2016 | *Ron Brown Captain* |

## Talks/ Presentations

1. *Brauer groups of stacky curves, via the example of $\mathscr{Y}(1)$*, Rice AGNT Seminar, Rice University. (October 2024)
2. *Brauer groups of stacky curves, via the example of $\mathscr{Y}(1)$*, AMS Fall Western Sectional Meeting, UC Riverside. (October 2024)
3. *On Brauer groups of stacky curves*, Québec–Maine Number Theory Conference, Québec. (October 2024)
4. *On the Brauer groups of stacky curves*, Explicit Methods in Number Theory, Oberwolfach (MFO). (September 2024)
5. *The average rank of elliptic curves is bounded, over any global field*, The Mordell conjecture 100 years later, MIT. (July 2024)
6. *Integral Points on Varieties with Infinite Étale Fundamental Groups*, GTA: Philadelphia 2024, Temple University. (June 2024)
7. *The Brauer Group of Stacky $\mathscr{Y}_0(2)$*, UW Number Theory Seminar, University of Washington. (April 2024)
8. *The Mordell–Weil theorem and Chabauty's theorem*, Seminar on Topics in Arithmetic, Geometry, Etc. (STAGE), MIT. (February 2024)
9. *The Average Size of 2-Selmer Groups of Elliptic Curves over Function Fields*, Harvard Number Theory Seminar, Harvard University. (February 2024)
10. *An Overview of DGH's Proof of Uniform Mordell*, Uniform Mordell Learning Seminar, Boston University. (February 2024)
11. *The Average Size of 2-Selmer Groups of Elliptic Curves over Function Fields*, Brown University Algebra Seminar, Brown University. (January 2024)
12. *The Average Size of 2-Selmer Groups of Elliptic Curves over Function Fields*, Boston University Number Theory Seminar, Boston University. (January 2024)
13. *An Upper Bound for the Average Rank of Elliptic Curves over Global Function Fields, via 2-Selmer Groups*, Joint Mathematics Meetings, San Francisco. (January 2024)
14. *Automorphic forms for quaternion algebras I*, Modularity/Fermat Seminar, MIT. (November 2023)
15. *Integral models of modular curves*, Seminar on Topics in Arithmetic, Geometry, Etc. (STAGE), MIT. (November 2023)
16. *Galois Deformation Rings & Stating $R = \mathbb{T}$ Theorems*, Modularity/Fermat Seminar, MIT. (October 2023)
17. *An Overview of the proof of Fermat*, Modularity/Fermat Seminar, MIT. (September 2023)
18. *Complex Multiplication, Shimura-Taniyama formula*, Seminar on Topics in Arithmetic, Geometry, Etc. (STAGE), MIT. (May 2023)
19. *The descent obstruction*, Seminar on Topics in Arithmetic, Geometry, Etc. (STAGE), MIT. (December 2022)

20. *Galois Reps at p*, $p$-adic Hodge Theory Learning Seminar, Harvard University. (October 2022)
21. *Local Heights and Arithmetic Surfaces*, Gross-Zagier Seminar, Online. (July 2022)
22. *Étale Topology*, Étale Cohomology Learning Seminar, Online. (June 2022)
23. *More on Hurwitz Spaces*, Arithmetic Statistics Seminar, Harvard University. (April 2022)
24. *Reparametrisation of Definable Sets*, Harvard Number Theorists Seminar, Harvard University. (April 2022)
25. *Proof of the New Gap Principle 1*, Seminar on Topics in Arithmetic, Geometry, Etc. (STAGE), MIT. (April 2022)
26. *Vojta's Approach to the Mordell Conjecture II*, Seminar on Topics in Arithmetic, Geometry, Etc. (STAGE), MIT. (October 2021)
27. *Vojta's Approach to the Mordell Conjecture I*, Seminar on Topics in Arithmetic, Geometry, Etc. (STAGE), MIT. (October 2021)
28. *Introduction to Class Field Theory*, Juvitop Seminar, MIT. (February 2021).
29. *Homological Stability for Mapping Class Groups of Surfaces*, IAP Kan Seminar, MIT. (January 2021)
30. *Forms of K-Theory*, Kan Seminar, MIT. (December 2020)
31. *Quillen's Work on Formal Groups and Complex Cobordism*, Kan Seminar, MIT. (November 2020)
32. *Cohomology Theories*, Kan Seminar, MIT. (October 2020)
33. *Smooth and étale morphisms*, Seminar on Topics in Arithmetic, Geometry, Etc. (STAGE), MIT. (September 2020)
34. *Basic Properties of the Riemann Zeta Function*, Stanford Math Directed Reading Program Colloquium Session II, Winter 2019, Stanford University. (April 2019)
35. *On Gaps in the Closures of Images of Divisor Functions*, Joint Mathematics Meetings 2019, Baltimore. Joint work with Aaron Berger. (January 2019)

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| Other Work Experience | Summer 2017 | Software Engineering Intern at Affirm, San Francisco, CA |
| Programming Skills | Proficient | C/C++, Rust, Python, Mathematica |
| | Advanced | Haskell, Octave, Common Lisp |