Caleb Geiger

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: https://calebgeiger.org/
: Hinesville, GA (Open to relocation)

TECHNICAL SKILLS

- **Fluent in:** Python, Git
- **Prior projects using:** C++, Sage, Numpy

SELECT PERSONAL PROJECTS

- **HanabiAI**: A project that used genetic learning algorithms to teach an AI to play the card game Hanabi. As a consequence, it also included a text-based implementation of the game of Hanabi to play with the AI. See https://github.com/ElodinLaarz/HanabiAI.
- **Crypto**: A simple project where I implement Diffie-Hellman Key Exchange in the case of elliptic curves and then attempt to break the encryption using Pollard's Rho algorithm. See https://github.com/ElodinLaarz/CryptoPractice.
- **APLUnity**: A simple, single, two-dimensional level coded in C# using Unity. See https://github.com/ElodinLaarz/APLUnity/tree/master/APL%20Unity

EXPERIENCE

- **University of Washington** — Seattle, WA
  Researcher in Computational Number Theory — *Sep. 2015 — Jun. 2020*
    - **Overview**: Thesis research centered around the ideal class group of imaginary quadratic orders by counting the number of ideals prime powered norm in the case of non-maximal orders.
    - **Technical skills used**: Heavily used Sage and Python when working with these non-maximal orders.
    - **Link to thesis**: https://digital.lib.washington.edu/researchworks/bitstream/handle/1773/45518/Geiger_washington_0250O_21118.pdf

- **Sagemath Open Source Project** — Online
  Volunteer Developer — *May 2017 — May 2020*
    - **Overview**: Due to the lack of specific implementation in the case of non-maximal ideals, I had to provide novel implementations of ideal calculations in imaginary, quadratic fields. See https://www.sagemath.org/
    - **UW Sagemath Seminar Organizer**: Helped 6 math graduate students make their first open-source contribution!

- **foobar.withgoogle** — Online
  Level 4 — *Current*
    - **Overview**: Stumbled into it whilst searching something about Python, and I am currently completing the fourth level!

- **Google Code Jam** — Online
  Participant — *2019-2021*
    - **Overview**: Participated in the last three Google Code Jams, qualifying in 2020 and 2021.

- **Google Hash Code** — Online
  Participant — *2020-2021*
    - **Overview**: Participated in the last two Google Hash Codes, earning 25,864,460 points in 202, and placing 2615th in 2021.

EDUCATION

- **University of Washington, Seattle** — Seattle, WA
  M.S. in Mathematics specializing in Algebraic Number Theory — *Sep. 2015 — Jun. 2020*

- **University of California, Irvine** — Irvine, CA
  Bachelors in Mathematics — *Sep. 2013 — Jun. 2015*