

# Kevin Lui Ph.D.

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Citizenship: USA

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🌐: <https://kevinlui.org/pages/code>

📖: Seattle, WA

## TECHNICAL SKILLS

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- **Fluent in:** Python, Git
- **Prior projects using:** SQL, Bash, C++, MATLAB, Cython

## SELECT PERSONAL PROJECTS

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- **langclass:** A model for determining the programming language from its source code. Model uses feature hashing of character-level 2-grams followed by a gradient boosting tree classifier. Live-version deployed on AWS in a Docker container running Flask/Waitress. See <http://langclass.kevinlui.org>.
- **caleb:** Python package that helps with Latex citation by automatically retrieving bibliographic information from publicly available online sources. Used travis for CI, pytest for testing, and poetry for dependency management. See <https://github.com/kevinywlui/caleb>

## EXPERIENCE

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- **University of Washington** Seattle, WA  
*Researcher in Computational Number Theory* Sep. 2014 — Jun. 2019
  - **Overview:** Thesis research centered around creating and implementing algorithms in number theory. Created polynomial-time algorithms for computing invariant where existing methods where computationally infeasible or non-existent.
  - **Technical skills used:** Implemented algorithms using thousands of lines of Python. Invariants were computed in parallel on a 24-core server and stored in a PostgreSQL database.
  - **Link to thesis:** <https://kevinlui.org/pages/thesis>
- **Sagemath Open Source Project** Online  
*Volunteer Developer* Jun. 2016 — Present
  - **Overview:** Active contributor and user of Sagemath which is a Python mathematics package, similar to scipy, suitable for research-level number theory computations. See <https://www.sagemath.org/>
  - **Contribution stats:** Authored 25 tickets, 19 accepted. Reviewed 10 tickets. Thousands of Python lines added.
  - **UW Sagemath Seminar Organizer:** Helped 6 math graduate students make their first open-source contribution!
  - **Link to code contributions and code reviews:** <https://kevinlui.org/pages/code#sagemath>
- **Google Summer of Code - Sagemath** Online  
*Student Developer* Summer 2016
  - **Overview:** Implemented number theory algorithms in Python to help close feature gap between Sagemath and its closed-source competitor MAGMA.
  - **Outcome:** This code has been merged into the master branch <https://trac.sagemath.org/ticket/21496> and is the foundation for my Ph.D. thesis work.
- **UC Santa Barbara** Santa Barbara, CA  
*Undergraduate Summer Researcher* Summer 2012
  - **Overview:** Derived a parametric model for determining a consensus given a group of experts' rankings.
  - **Role:** Wrote MATLAB code to solve the LP problem derived in the paper. Worked closely with faculty mentor to develop the model.
  - **Outcome:** Published: <https://www.sciencedirect.com/science/article/pii/S0165011413003308>

## EDUCATION

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- **University of Washington, Seattle** Seattle, WA  
*Ph.D. in Mathematics specializing in Computational Number Theory* June 2019
- **University of California, Santa Barbara** Santa Barbara, CA  
*Bachelors in Mathematics* June 2014