

Samuel S. Schiavone

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PROFILE

I am a Ph.D. mathematician, researcher, and programmer, who combines mathematical abstraction with computational tools in order to discover, analyze, and elucidate. I specialize in translating theoretical concepts into practical solutions.

EDUCATION

Dartmouth College <i>Ph.D. in Mathematics</i>	Hanover, New Hampshire Sep 2019
The University of Vermont <i>M.S. in Mathematics</i>	Burlington, Vermont Dec 2013
Amherst College <i>B.A. in Mathematics, magna cum laude, Phi Beta Kappa</i>	Amherst, Massachusetts May 2010

SELECTED EXPERIENCE

Research Scientist <i>Massachusetts Institute of Technology</i>	Sep 2019 – Aug 2025 Cambridge, Massachusetts
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- Conducted research in computational arithmetic geometry.
- Devised and implemented algorithms to compute mathematical objects, wrote mathematical proofs, and chronicled my research in academic articles.
- Aided in the development and maintenance of the L-functions and Modular Forms Database (<https://www.lmfdb.org/>), working both with data in PostgreSQL and Python on the backend and in Flask, Jinja, and HTML on the frontend.
- Instructed undergraduate students in courses on linear algebra, algebraic geometry, mathematical communication, and Belyi maps.

SELECTED PROJECTS

Development for the L-functions and modular forms database (LMFDB) <i>Full Stack Web Development</i>	May 2018 – Present Remote
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- Collaborated on a joint open-source project to create an accessible repository of data in algebra and number theory, used by over 30,000 researchers and educators in math.
- Co-created two sections of an online database: added data to the backend using Python and PostgreSQL; designed webpages to display the data using Flask, Jinja, and HTML.
- Supervised four undergraduate students in the creation of a Magma and SageMath package to compute additional data.
- Connected to other sections of the LMFDB by identifying and linking to related objects using scripts written in Python and SageMath.

Computations in Inverse Galois Theory <i>Academic Research</i>	Jan 2022 – Nov 2024 Cambridge, Massachusetts
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- Collaborated on a team of 6 researchers to solve an open mathematical problem in computational number theory.
- Combined theoretical expertise with practical programming skills in Python, PostgreSQL, SageMath, and Magma to produce a research article and two repositories of code, one a general Magma package and one tailored to a specific example.
- Presented results in two invited talks to audiences of 30-50 researchers at [VaNTAGe](#) and Simons AGNTC annual meeting.
- Synthesized detailed understanding of theoretical results in arithmetic geometry with technical programming expertise to give an explicit solution to an open mathematical problem.

SKILLS

Programming Languages: Python, PostgreSQL, SageMath, Magma, R

Programming Tools: Git, Pandas, Numpy, Scikit-learn, Flask, Jinja, GNU Parallel

Languages: English (native), French (fluent), Spanish (intermediate)