

**Arithmetic geometry:
Moduli spaces, Galois representations and tautological rings.**

Supervisor: Jonas Bergström

I work in arithmetic geometry, which is the intersection of algebraic geometry and number theory. I like to study curves, abelian varieties and Drinfeld modules. I am especially interested in the moduli spaces of these objects and their cohomology rings, of which one part is called the tautological ring and which contain other parts with Galois representations that are connected to modular (and automorphic) forms.

A PhD-project supervised by me is likely to be connected to some of the objects mentioned above and to involve the use of computers.

I have two specific projects in mind:

- one involving counts over finite fields of curves of genus four, in order to study the cohomology of the corresponding moduli space
- one involving the tautological ring of moduli spaces of weighted pointed stable curves.

On my homepage: <https://www.su.se/english/profiles/jonab>
you can find links to the papers I have written if you want to get a better impression.