

Potential Master's Thesis Projects

Topics & Reading List

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Studies in TAG: Topology, Algebra, & Geometry

1. Covering Spaces [pdf](#) This is the product of a fancy REU. Nice connection between topology & Galois theory.
2. A Primer on Mapping Class Groups [pdf](#) A modern classic.
3. Intro to Mapping Class Groups [pdf](#) A nice reformulation of the first few chapters of the Primer above.
4. Andrea Clark's Thesis [pdf](#) More to be done here.
5. Mobius Transformations
 - i) [Indra's Pearls](#) Beautiful book of fractals that touches on topology, algebra & complex analysis.
 - ii) Dated [website](#) on the text Indra's Pearls.
 - iii) Short overview [pdf](#)
 - iv) Detailed notes that serve as a textbook. [pdf](#)

Computations & Data

1. GeomStats [pdf](#) Riemannian geometry in Python. So cool.
2. Computations with any topic in the TAG section.
3. Represent data on manifolds & use the underlying geometry to tell you something about the data.