Potential Master's Thesis Projects
Topics & Reading List

Josh Thompson

Studies in TAG: Topology, Algebra, & Geometry

1. Covering Spaces pdf This is the product of an REU, exhibiting a 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

- Indra's Pearls Beautiful book of fractals that touches on topology, algebra & complex analysis.

- Dated website on the text Indra's Pearls.
- Short overview pdf
- Detailed notes that serve as a textbook. pdf

Computations, Data and Visualizations on Manifolds

1. Contribute to GeomStats pdf

    - Riemannian geometry in Python.

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.

4. Visualizations of geometric structures on surfaces. parallel transport