

# Project Ideas

CS 4860

September 2016

1. Use proof assistant ideas to develop an interesting algorithm or program, e.g. numerical, lists, trees, real numbers, geometry.
2. Compare and relate proof systems, especially Hilbert style, Natural Deduction, Refinement, and Tableaux.
3. Analyze and explain Gödel's incompleteness theorem and apply to proof assistants.
4. Read Michael Beeson's paper on formalizing Euclidean geometry.
5. Study one of the classic papers on proof assistants.
6. Report on computational analysis of the continuum.
7. Study the logic of events and apply it to analyzing a simple distributed protocol.

To be continued.