**Visualization Outline**

* **Sections**
* **Introduction (1.5 pages max)**
  + **General Background**
    - SAT
    - Communities
    - Community in SAT (Ref other paper)
  + **Brief problem statement**
    - How to visualize communities in SAT
  + **Why is the problem interesting**
    - The problem is interesting since this provides a different view as to how a SAT instance can be divided and certain observations can be made on that
  + **Some related work**
    - Visualization paper
  + **Outline your solution**
    - Try to colour each community differently and be able to visualize how the SAT instance changes as it is solved
  + **Problem statement (one paragraph)**
    - More verbose than above
* **Solution overview (1.5 pages max)**
  + Use SNAP to find communities and GraphViz and UbiGraph to illustrate it. Colour each community differently. Also evolution as the SAT instance is being solved
* **Detailed description of your solution (2 pages max)**
  + Go into a bit more details about the code for the implementation
* **Experimental results (2 pages max)**
  + Show pictures of 2 or 3 different SAT instances in both Graphviz and UbiGraph. Also show a few pictures of the evolution with Graphviz. Remark a few things about the colouring of the communities such as for Feature Models it is easy to see that they are indeed separated into distinct communities which confirms the findings of the other paper.
* **Related work and how your work compares with the related work (1 page max)**
  + Compare to the visualization paper
    - Main difference is the colouring of the communities and the tools used (find more)
* **Conclusion (2-3 pages max)**
  + It is useful to see the SAT instance in this representation with the division and colouring by community.
* **Future work (1 paragraph max)**
  + Get evolution to work in Ubigraph.
  + Have an option to separate positive and negative literals.
* **References (1 page max)**

1. N. Een, and N. Sorensson. (2004) *An Extensible SAT-solver (version 1.2)* [Online]. Available: <http://www.contrib.andrew.cmu.edu/~avigad/Teaching/practical/MiniSat_v1.2.pdf>
2. S. Fortunato, V. Latora, and M. Marchiori. (2004) *Method to find community structures based on information centrality* [Online]. Available: <http://www.w3.org/People/Massimo/papers/2004/community_pre_04.pdf>
3. M. E. J. Newman, and M. Girvan. (2003) *Finding and evaluating community structure in networks* [Online]. Available: <http://arxiv.org/pdf/cond-mat/0308217.pdf>
4. C. Ansotegui, J. Giraldez-Cru, and J. Levy. (2012) *The Community Structure of SAT Formulas* [Online]. Available: [http://link.springer.com/chapter/10.1007%2F978-3-642-31612-8\_31#page-1](http://link.springer.com/chapter/10.1007%2F978-3-642-31612-8_31" \l "page-1)
5. C. Sinz. (2007) *Visualizing SAT Instances and Runs of the DPLL Algorithm* [Online]. Available: <http://cse-wiki.unl.edu/wiki/images/7/71/DPvis-Sinz.pdf>