CPR/SE 491 Weekly Report   MAY 15-10   Week 9

Advisors: Ruchi Chaudhary
Client: Gordon Burleigh
Members (roles):   Ben -- Team leader
                                Cole -- Team Key Concept Holder
                                Ian -- webmaster
                                Paul -- communication leader

Project Title: Gene Tree Improvement Tool / TreeFix

Weekly Summary

The main goal this week was to finish the design document, start revising our project plan, and start thinking about implementing our MulRF cost model into the Treefix code. The team sent our design document draft to Ruchi last week, and we worked early in the week tweaking it using her suggestions. The group met together on both Friday and Sunday for several hours each to discuss the implementation plan and split up the work as well as start revising our project plan for version two. The details of these meetings are in the meeting notes sections. We also had a short meeting with our advisor to discuss upcoming deadlines for the group.

Meeting notes:

10/31   Group Meeting with Advisors
Duration: *15 min*   **Members Present:** *All*

Purpose and Goals:
Quick meeting just to touch base.
We didn't discuss much at our meeting this week because most of the work since our last meeting was working on our design document which our advisor had already seen and gone over for us. We discussed the upcoming deadlines of the project plan and group presentation as well.

10/31   Group Meeting
Duration: *3hr*   **Members Present:** *All*

Purpose and Goals:
Create a plan for the first implementation of MulRF. The group met together to go over comments compiled by the team on our github account, and to discuss how to start coding the MulRF cost model. The group started dissecting the duploss model code to learn what each of the methods did, and how each of them were tailored to the duploss model. We took note of the changes that would have to be made to accommodate the new model, such as removing checks for binary trees, and making an new algorithm to find duplicate genes.

11/2   Group Meeting
Duration: *120 min*   **Members Present:** *All, except Ian*

Purpose and Goals:
Start second version of the project plan and set goals for next week. The group looked at the rubric for the project plan, and catalogued what sections we had and what ones we were missing. We found that we missing quite a few required sections, so we split up the work among the group members and decided to reconvene with a finished plan on Tuesday so we could send our draft to our advisor to look it over for us before the due date.

After splitting up the work, we looked at structure of the duploss model and CostModel code to determine how to change it for our MulRF model.

Pending issues

1. It seems as though we are ready to attempt coding a prototype. Very soon, then, we can produce a "zeroth iteration" of TreeFix-MulRF for testing. This is feasible right now, because we have gleaned the necessary information from the existing TreeFix code, and the handful of small designs, which we believe are instrumental to enabling MulRF in TreeFix, are almost ready.

Plans for next week

1. Cole will implement a search algorithm to find duplicate gene.
2. Ian will implement compute_cost for MulRF.
3. Paul will finish changes to the 2nd draft of our Project Plan, and help Cole with implementing the search algorithm.
4. Ben will finish Project Plan v2 and assist others with where they need it

Individual Contributions(this week)

Cole Poffenberger: (8 hrs)
1. Identified code that can be reused and code that needs reimplemented for MulRF.
2. Finished design document.
3. Started working on the second version of the project plan.

Ian Ray: (6 hrs)
1. Identified that MulRF might not necessarily need to reimplement the recon_root method, which would save a lot of headache. The amount of work for the project would then be distilled down to 1. implementing the MulRF computation (compute_cost, which again, I intend to do this week), 2. 'rewiring' code that will add the MulRFModel to TreeFix, and 3. of course other important miscellaneous changes, such as finding duplicate genes and reconciling them (which, again, Cole intends to do this week).
2. Contributed commented code to GitHub project repository. Specifically, comments on treelib.py, on the classes TreeNode, BranchDataManager, and Tree.

Ben Streit: (9 hrs)
1. Started on the Revised Project Plan v2
2. Final Changes to Design Document v1

Paul Leichty (8 hrs)
1. Final changes to our first draft of the Design Document. Removed old modular block diagram and created a new one, retooled several sections for increased clarity.
2. Started work on the second version of the project plan, specifically working on the System Requirements section
3. Worked with Ben and Cole going through the Treefix code related to the duploss model, cataloging the methods required by the CostModel class, and detailing the changes that have to be made from duploss to MulRF, such as recon_root and compute_cost methods.

Total contributions for the project

Cole Poffenberger (24.25 hrs)

Ian Ray (29.5 hrs)

Ben Streit (27.25 hrs)

Paul Leichty (25.5 hrs)