

CPR/SE 491 Weekly Report MAY 15-10 Week 11

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

This week, we began coding. We have begun this early essentially to test our understanding of the project. By implementing a likely naïve set of modules to plug into treefix, we can figure out what works, what doesn't, and what needs to happen next. This naïve set of modules were the MulRF cost evaluation metric, a glue code module to link the MulRF class into treefix, and a module to format the input trees for MulRF. On Tuesday, we discussed what we would do to implement everything. We decided that we would meet on Friday and have a coding session. At the end of Friday night, we had TreeFix running with our first iteration of MulRF.

When we tested TreeFix, we received an output, telling us that the code at least compiled. However, it did not perform as initially expected. We have constantly compared MulRF TreeFix with DL TreeFix in order to gauge our progress; DL TreeFix runs the reconciliation on many tree topologies, while MulRF TreeFix only manages one initial topology. This is bothersome, while it is a pretty large deviation from the specified behavior of TreeFix. Clarifying why MulRF cannot perform on multiple tree's will be the next issue we delve into. We will also need to test interactions between the formatting module and the code, while it might be causing difficulty.

One final note: while we initially set forth to program glue code to allow for MulRF to be used, it turned out TreeFix anticipated the need for scalability, and already contains such a mechanism. No glue code was added, and from now on, a defaultmodule flag is used to signify the use of MulRF.

Meeting notes:

9/11 Group Meeting

Duration: 15 min

Members Present: All

Purpose and Goals:

Discussed plans and goals for Friday's coding session.

Achievements:

Coordinated all group members.

9/14 Group Meeting with Advisors

Duration: 45 min

Members Present: All except Ben

Purpose and Goals:

Our advisor, Ruchi, is heading to India for several weeks, so we will be working without face-to-face advisor access for the rest of the semester. During this meeting, we discussed the best means for communication (if necessary), and we also provided her with an update on what our game plan was for the rest of the semester.

Achievements:

Coordinated group members with advisor, discussed upcoming plans for implementation.

9/14 Group Meeting

Duration: 3 hrs

Members Present: All except Ben

Purpose and Goals:

Implemented the cost model for the MulRF algorithm and worked on created a search algorithm to identify duplications within the trees.

Achievements:

Knocked out a test/first iteration MulRF TreeFix.

Pending issues

1. Assess errors produced by TreeFix w/ MulRF.
 - a. Is MulRF.compute_cost() correctly implemented?
 - b. Is the MulRF species tree formatting module causing errors?
 - c. Does MulRF itself affect TreeFix's ability to perform effectively? That is to say, is MulRF feasible with TreeFix?

Plans for next week

1. Handle pending issue number one.

Individual Contributions(this week)

Ben Streit(4 hrs) - Missed the group meeting so spent Friday night reading through the created code and understanding what was done.

Cole Poffenberger (4 hrs) - After Friday's meeting with our advisor we spent 3 hours working of an implementation of the MulRF algorithm.

Ian Ray (5 hrs) - After Friday's meeting with our advisor we spent 3 hours working of an implementation of the MulRF algorithm. Specifically, implemented MulRF.compute_cost() function.

Paul Leichty (4 hrs) - After Friday's meeting with our advisor we spent 3 hours working of an implementation of the MulRF algorithm. Worked on figuring out the command line arguments and how to specify which cost model to use. The code can now use either duplossModel or MulRFModel with command line arguments.

Total contributions for the project

Cole Poffenberger (34.75)

Ben Streit(35.25 hrs)

Ian Ray (40.5 hrs)

Paul Leichty (36.5 hrs)