Phylanx Meeting Notes

February 1, 2018

* Adrian, Hartmut, Rod, Bibek, Ali, Shahrzad, Parsa, Connor, Steve, Katy, Stefan, Kevin, Monil, Chis
* Chris
  + BAH has not said anything
  + Blaze
    - Completed all dense matrix tests for Blaze
    - Starting on sparse matrix
  + Taking a course at Georgia Tech
  + Talked to Tree Transducer expert in Japan
    - Has a Python version available
  + Had a conversion with Navel Research folks
    - Interested in doing some Bio Medical work with Phylanx
    - Plan to meet with them next week
  + Two briefs with seniors
    - Went well
    - Plans to support us with more use cases
  + Hartmut- Btw Micron has not contact us
* Ravel (Katy)
  + I am Kat’s student in the vis. Lab
  + I have received data and have produced some trees from this and moved then from Rostam
* APEX
  + We have submitted everything to BAH
    - Having a back and forth
  + Buildbot
    - Some of the tests have crashed GCC (KNL)
      * Steve- I was able to reduce the number of threads used to compile
  + Will not be able to join this meeting next week
  + New build system
    - Glanced at Pycicle
      * A little overwhelmed
* Tiling
  + Started working on a linear model of the tiling
  + Looked into hiring a postdoc
* Algorithms & Primitives (Bibek)
  + Primitives
    - V-stack and H-stack
    - Diag primitive is a pull request
  + Shahrzad-
    - Pull request accepted
    - Element wise compare
    - Adding more element wise operations
  + Ali-
    - Making progress of the Highfive primitive
    - Hopes to finish this today
    - Needs to add it to the build system
      * HighFive is a header only library
      * Would require two CMake flags
      * Hartmut- I have added HighFive to AppVeyer
  + Parsa
    - We have performance counters
      * Returns the number of primitives as well as the time
* Python Bindings
  + Rod-
    - Looking into transducers
    - AST to strings
    - Have a blog post should e
  + Steve-
    - Worked on making the decorators to PhySL
    - Gotten the string arguments to work
    - Hartmut we have an end to end Phylanx code
      * Python on one side to HPX on the other
    - Kevin- Does this add any other build dependencies
      * Steve- NumPy
  + Hartmut- I would like to have Python code run in a Jupyter Notebook with a visualization from Ravel underneath
* Goals
  + Primitives
    - After element wise compare we should be able to implement ALS in PhySL
      * We need to have an example of the LRA and ALS
        + Success Criteria:

Written in PhySL and Python

Performance comparisons

Documented

* + Documentation
    - We have Doxygen nominally integrated into the build system
    - Solutions for Python
      * Phylanx
      * Sage Publication
    - QuickBook
    - Hartmut- I will look into this
  + Stefan
    - Currently would like to create an optimization algorithm
      * Talked about looking at matrix multiplication to get started
    - Spartan claims that their greedy algorithm
      * We could look into where the greedy algorithms
    - Hartmut- We could try to optimize the tiling the LRA or ALS algorithm
      * Stefan- This sounds like a good idea
      * Adrian- What would the algorithm do?
        + The algorithm would take the tilings supported and the cost of those tilings
        + Returns the instructions on how to tile
      * By creating the algorithm to optimize the tiling for the LRA or ALS algorithm it would give the team feedback on what parameters must be given to the optimizer and an idea of what the algorithm would give back
* Next Meeting: Thursday February 8th at 3:30pmET/2:30pmCT via Webex