**Entry Point:**

Compile\_mexSolveModelGivenParms.m

* For compilation we will need the following files:
  + mexSolveGivenParms.cu
  + liquidity\_mex\_defs.cu
  + normaldist\_mex.cu
  + tauchen\_mex.cu
  + liquidity\_vfi\_mex.cu

mexSolveGivenParms.cu

* This is a mexfile and serves as the main link between the C++/CUDA and MATLAB.
* How this function is called in MATLAB to solve the model given the parameters:
  + For us to run this function, we need to have arguments, the arguments are given in:
    - Fit\_params\_10302020\_turnover\_1998\_2004\_run2.m
      * This file does not run mexSolveGivenParms.cu directly.
      * It calls FitParmsExactID\_Parallel\_5moments.m
        + This is the function that calls mexSolveModelGivenParms
        + Then computes moments using SimSinglePath\_mex\_output.m

Does this function use other functions?

* How is this function constructed in terms of the C++ code?
  + Once parameters are read into the model, the mexfunction calls the function SolveModel
  + This function is defined in liquidity\_vfi\_mex.cu along with other functions.
* What other things does this file do?
  + Read parameters and translate them to C.
  + Store the parameters in a class defined in the host.
  + Calls SolveModel and stores all the results in host memory.
  + Creates an output structure in MATLAB and exports the results to MALTAB.

liquidity\_vfi\_mex.cu

1. This file creates several functions:
   * Ggq\_topdown
   * Vfi\_iterate\_policy
   * Vfi\_iterate
   * Vfi\_interpolate
   * Vfi\_update1
   * Vfi\_update2
   * Update\_compute\_errors
   * Vfi
   * SolveModel
     + This function oversees allocation of device memory.
     + Initializing device memory.
     + Initializing value functions.
     + Running vfi
     + Running vfi\_iterate\_policy
     + Copying memory to host
     + Freeing memory.
   * initValueFuns

**Questions for Yu:**

1. What is the dynamic term doing during compilation of the mex file?

**Questions to Answer:**

1. What are the convergence criteria?