- (Mostly survey + some experiments) Study different conflict-clause learning schemes, and see which schemes work most efficiently at inversion/collision problems for hash functions

- (Experimental project with MapleSAT) Optimizing learning rate to learn "high quality" conflict clauses. Modify the reward function of the branching heuristic such that variables in low-LBD learnt clause get a higher reward.

- (Survey) SMT solvers for refinement types

- (Survey) Branching heuristics in SAT solving

- (Experimental project with MapleSAT) Use programmatic interface of a SAT solver to encode constraints to guide search

- (Experimental project with MapleSAT) Clause minimization technique to reduce size of conflict clause database

- (Experimental project with MapleSAT) How to initialize branching heuristics such that the solver is faster than the current approach where all variables get the same initial activity score. Can we use community structure?