

ECE 6108: Suggested Projects

The purpose of these projects is to enable you to delve deeply into a particular algorithm. For the project that you have selected, it is expected that: (1) you perform a thorough literature search, (2) implement the algorithms with the best possible data structures, (3) perform extensive testing of the implemented algorithm, and (4) document the algorithm, implementation, and results in the form of a professional journal paper. I can point to the literature for the project that you have selected. **The projects can be team efforts.** The following projects are offered as potential candidates:

1. Thorough investigation of sequential and parallel shortest path algorithms with a focus on most recent ones
2. M-best shortest path algorithms
3. Distributed asynchronous shortest path algorithms, along with application to routing in communication networks. Interested in their transient behavior in the face of failures and repairs of communication links.
4. A Comparative Analysis of Various Max-flow Algorithms
5. Algorithms for the network flow problem.
6. Distributed Auction algorithm for the assignment, and generalized assignment problems.
7. A comparative evaluation of the best-in-class assignment algorithms
8. M-best Assignment Algorithms
9. Solution of multi-dimensional matching problems via successive solution of assignment problems.
10. Distributed Max-flow Algorithms
11. Distributed network-flow Algorithms
12. Any other project with my approval