

## **Term paper based on an individual study**

1. You are writing a survey paper on a class of algorithms of your choice. You must do an in-depth analysis of the algorithms of that class and present your paper from a critical point of view.
  - The emphasis will be on discussing their time complexity (and possibly space complexity as well) – upper bounds, lower bounds, and asymptotic tight bounds.
  - Describe the motivation for developing this class of algorithms. Where are they used?
  - Describe the historical development of these algorithms and discuss the advantages and disadvantages of using one versus another.
  - What observations and special techniques led to successively obtaining better solutions?
  - Discuss situations in which using one algorithm is better than using another one for the same problem and give justification.
  - What is the significance and impact of developing these algorithms?
  - Present the conclusions of your study. What lessons have you learned?
  
2. Alternatively, if you are already pursuing research on a specific problem and algorithms for that problem, you may present a study on that particular algorithm. In that case, you may place more emphasis of your newly developed algorithm and discuss its superiority from theoretical point of view over other algorithms. You may also discuss experimental results and their impact on your research. You should guide the content of your paper from the points listed in the above paragraph (#1).

In both cases, the paper must contain:

- Motivation for the study
- Discussions of these algorithms from a critical point of view
- Significance and impact
- Conclusions

Recommended length of the paper: 5-10 pages (including bibliography)

Style: ACM or IEEE Computer Society.