

## CSC 450, Senior Research Research Outline

1. Write an **outline** for your paper, by completing the template below. The outline consists of major points that can be filled in as you write your paper. If appropriate, an alternate set of section headings can be used with my approval. Note that the Results section should be an unbiased presentation of the results, and includes new methods or simulations, if part of the research. The Discussion interprets the results, puts them in the context of the topic, and discusses their significance, limitations, and future work (see notes for an example).

The section headings include the following: Introduction, Materials & Methods, Results, Discussion, and References.

- I. Introduction (must include at least 2 citations in IEEE background )**
  - a. Background (add at least 2 facts that provide necessary background)
  - b. Problem statement / objective / hypothesis
  - c. Significance (add at least 2 points that describe the significance of your specific project)
- II. Materials and Methods** (add at least 4 points describing the methodology in detail)
- III. Results** (describe at least 3 graphs or tables that will be presented; graph descriptions must include  $x$  and  $y$  values; table descriptions must include columns and rows).
- IV. Discussion (related work includes at least 2 citations in IEEE format)**
  - a. Summary of your main (expected) findings
  - b. Related work (describe and cite at least 2 related findings that will be discussed in the context of your results)
  - c. Limitations (include at least 2 limitations related to your project)

### **References (contains at least 4 references in IEEE format)**

2. For those working in a group, you must add a section for **Member contributions and alternative approaches**, with details provided by each person.
  - a. Each individual should describe what their responsibility toward the Research Project will be.
  - b. If your part of the project is dependent on somebody else completing their part of the project, you must also describe what you will do if the other person or persons are unable to complete their work.
  - c. The purpose of this section is to make sure that each person can complete a project in the event that one or more of their group members are unable to (e.g., they get sick or flee the country). This is an important aspect of thinking about research.

Examples:

1. If you are developing a model and someone else is testing or experimenting with it, then you should describe a (possibly simpler) test or experiment as a “back-up” plan that you can perform in the event that the other person is unable to.

2. If someone else is collecting data and you are implementing a model to analyze that data, then you will need a “back-up” plan for the collection of a (possibly simpler) dataset that can be analyzed if the other person is unable to collect the data.

**This assignment must be handed in at the beginning of class on the due date.**