Instructor: Xiaofeng Gao

# The Title of Your Project The Sub-Title of Your Project

Author1 (ID, email), Author2 (ID, email), Author3 (ID, email)

Department of Computer Science, Shanghai Jiao Tong University, Shanghai, China

Abstract. Package delivery is such a significant problem nowadays. The convenience and speediness of online shopping highly rely on an efficient and well-organized delivery network. Meanwhile, the delivery companies always want to reduce the cost of transportation while winning high rates from customers. The problem can be modelled as min-cost commodity flows over time. The characteristics of such kind of problem are networks with capacities and transit times. We also have other properies like the priority of orders of commodities, the ordering time and transportation restictions with respect to special kinds of commodities. However, such kind of problems is really hard to solve. Though static s-t flow problem can be solved in polynomial time, the problem we encountered is almost NP-Hard with enormous input size. Thus, we came up with some approximations to get good feasible solutions, applied these algorithms in different scenes and compared their performance.

Keywords: Package Delivery, Linear Programming, Network Flow, Routing, Flow over time.

### **Problem Formulation**

We can define variables as follows:

- $\mathbf{2}$ Theoretical Analysis
- 3 Algorithm Design
- Performance Evaluation
- First Section

#### A Subsection Sample

Please note that the first paragraph of a section or subsection is not indented. The first paragraph that follows a table, figure, equation etc. does not need an indent, either.

Subsequent paragraphs, however, are indented.

Sample Heading (Third Level) Only two levels of headings should be numbered. Lower level headings remain unnumbered; they are formatted as run-in headings.

Sample Heading (Fourth Level) The contribution should contain no more than four levels of headings. Table 1 gives a summary of all heading levels.

**Table 1.** Table captions should be placed above the tables.

- 1	0		Font size and style
	Title (centered)	Lecture Notes	14 point, bold
	1st-level heading		12 point, bold
	2nd-level heading	2.1 Printing Area	10 point, bold
	3rd-level heading	Run-in Heading in Bold. Text follows	10 point, bold
	4th-level heading	Lowest Level Heading. Text follows	10 point, italic

Displayed equations are centered and set on a separate line.

$$x + y = z \tag{1}$$

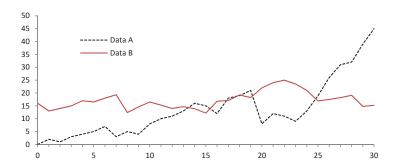


Fig. 1. A figure caption is always placed below the illustration. Please note that short captions are centered, while long ones are justified by the macro package automatically.

Please try to avoid rasterized images for line-art diagrams and schemas. Whenever possible, use vector graphics instead (see Fig. 1).

**Theorem 1.** This is a sample theorem. The run-in heading is set in bold, while the following text appears in italics. Definitions, lemmas, propositions, and corollaries are styled the same way.

*Proof.* Proofs, examples, and remarks have the initial word in italics, while the following text appears in normal font.

For citations of references, we prefer the use of square brackets and consecutive numbers. Citations using labels or the author/year convention are also acceptable. The following bibliography provides a sample reference list with entries for journal articles [1], an LNCS chapter [2], a book [3], proceedings without editors [4], and a homepage [5]. Multiple citations are grouped [1,2,3], [1,3,4,5].

## Acknowledgements

Here is your acknowledgements. You may also include your feelings, suggestion, and comments in the acknowledgement section.

#### References

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