How to write papers using LaTex

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***Abstract*—This article describes how to use LaTex to write academic papers. It is written to help absolute beginners to gain a glimpse of how academic paper is organized using LaTex. Technical details and fancy tricks of LaTex will not be covered in this article(as I do not know any of them). Hopefully, this can serve as a template or maybe a reference when some of us set out to write a paper.**

I. Introduction

In Introduction, we introduce the background of our work, describe briefly the problems we discover and the contribution we make.

II. Related Work

In this section, we introduce related prior work regarding this paper's research topic. Usually, this section involves lots of citations. citation works like this: [1].

III. Modeling and Formulation

Model/formulate the problem in this section.

A. Definition and Theorem and more

***Definition** 1:* A kitten is a juvenile cat.
***Property** 1:* Kittens are cute.
***Lemma** 1:* People love cute things.
***Theorem** 1:* People love kittens.
Proof: Trivial. ■

B. LP formulation

An example:

$$\text{minimize} \quad \max_{e\in E, s\in\{1,2,\ldots,n-1\}} \mu_e^s \tag{1}$$

$$\text{subject to} \quad \sum_{f\in F_{sp}\cup F_{mp}} d^f \sum_{p\in P(f):e\in p} \max(x_{f,p}^s, x_{f,p}^{s+1}) \le \mu_e^s C_e, \quad \forall e\in E, \forall s\in\{1,2,\ldots,n-1\}, \tag{1a}$$

$$\sum_{p\in P(f)} x_{f,p}^s = 1, \quad \forall f\in F_{sp}\cup F_{mp}, \forall s\in\{2,3,\ldots,n-1\}, \tag{1b}$$

$$x_{f,p}^s \in \{0,1\}, \quad \forall f\in F_{sp}, \forall p\in P(f), \forall s\in\{2,3,\ldots,n-1\}, \tag{1c}$$

$$x_{f,p}^s \ge 0, \quad \forall f\in F_{mp}, \forall p\in P(f), \forall s\in\{2,3,\ldots,n-1\}, \tag{1d}$$

$$\mu_e^s > 0, \forall e\in E, \forall s\in\{1,2,\ldots,n-1\}. \tag{1e}$$

IV. Algorithm

Algorithm 1 Put your caption here

```
procedure PROC(a, b)                          ▷ This is an example
    System Initialization
    Read the value
    if condition = True then
        Do this
        if Condition ≥ 1 then
            Do that
        else if Condition ≠ 5 then
            Do another
            Do that as well
        else
            Do otherwise
    while something ≠ 0 do ▷ put some comments here
        var1 ← var2                           ▷ another comment
        var3 ← var4
```

V. Evaluation

Since evaluation section is where figures and tables appear the most, I put examples of inserting figures and tables here, but they can be used elsewhere.

A. figures

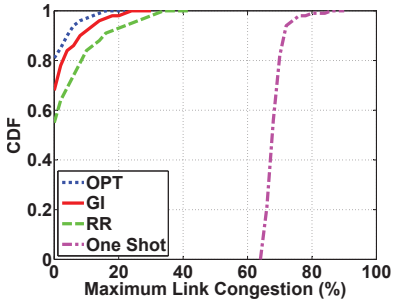
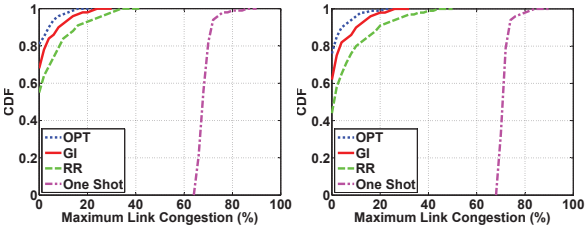
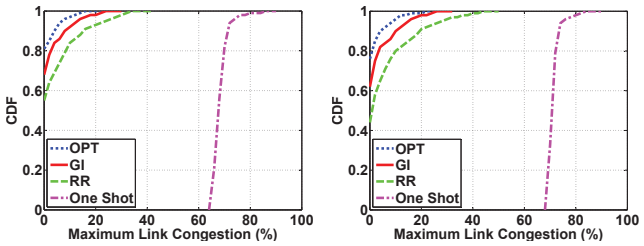


Fig. 1. insert one figure



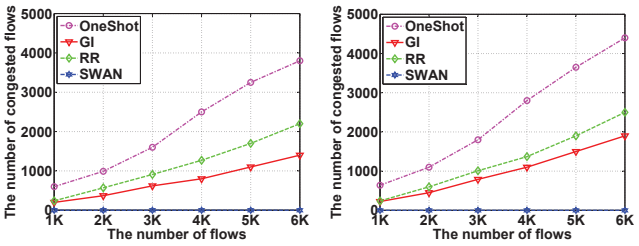
(a) fig1 (b) fig2

Fig. 2. put two figures together horizontally



(a) DCN scenario (b) WAN scenario

Fig. 3. Maximum link congestion comparison.



(a) DCN scenario (b) WAN scenario

Fig. 4. The number of congested flows.

B. tables

TABLE I
RUNNING TIME FOR FINDING CONGESTION-FREE UPDATE PLANS

	1K	2K	3K	4K	5K
DCN	0.73 min	1.40 min	2.10 min	2.96 min	4.12 min
WAN	0.60 min	1.01 min	1.57 min	2.43 min	3.12 min

write something to explain your table in here

VI. CONCLUSION

In this paper, we list the basic component of an academic paper and show how they are organized using LaTex.

VII. ACKNOWLEDGEMENT

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REFERENCES

[1] D. Adams and R. T. Davies. *The hitchhikers guide to galaxy*. Pan Books, 2009.

APPENDIX A
APPENDIX SECTION