

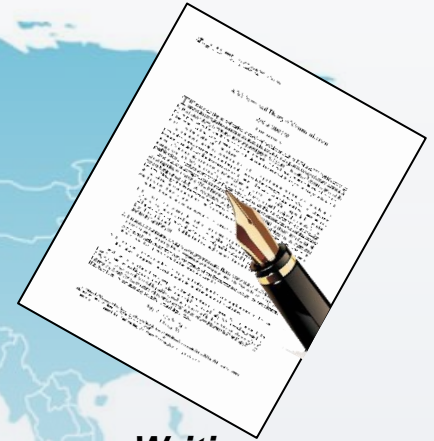
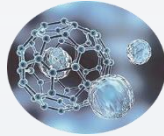
# English Practice



西安交通大学  
XI'AN JIAOTONG UNIVERSITY



conference

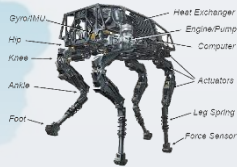


Writing

## How to speak English professionally?



Presentation



Networking

# Chapter 3 Introduction

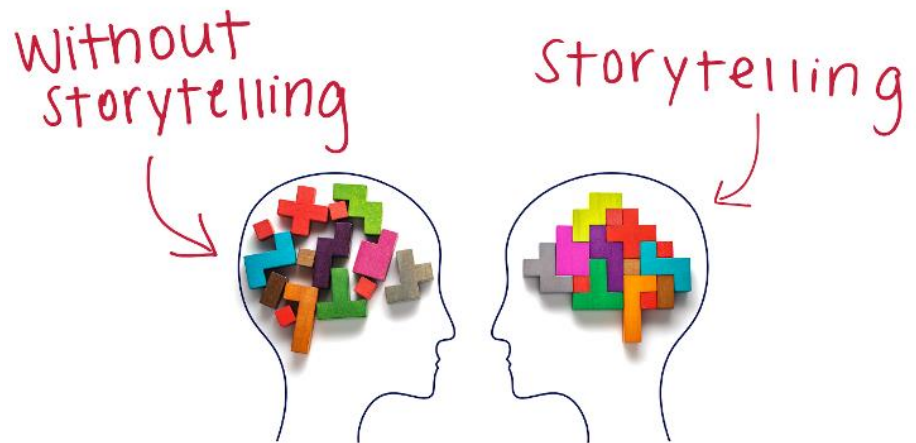
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- ❑ Order your material
  - ❑ Write a **concise and attractive title**
  - ❑ Construct a **neat abstract**
  - ❑ Write an **effective introduction**
  - ❑ Describe your **methods** so that other researchers could **repeat** your study
  - ❑ **Report your results precisely**
  - ❑ Make your **discussion** relevant and interesting
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# Introduction

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- ❑ One of the **most important** parts of the paper
  - The reader has decided to read your paper. Use the introduction to quickly understand the background, methods, results, contributions, and innovations of your paper.
- ❑ **Telling Stories Makes Us Human**



# Main points

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- **An introduction should include**
  - **Brief** introduction of the research background
  - **Clear** presentation of the research problem
  - **General** description of methods and results
  - **Explicit** statement of contributions and innovations
- **An introduction should be brief**
  - **<6 pages** of paper : the introduction is no more than 1 page
  - **8-12 pages** of paper: the introduction no more than 2 pages

# Introduction: The contents

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## □ What is the problem

- What is the research problem?
- Why is it important?
- What are the shortcomings of the existing studies?

## □ How we solve it?

- The method and idea of this paper is briefly introduced

## □ What is our contribution?

- Give the results and list the main contributions

## □ How the paper is structured (optional)?

- Chapter arrangement of the full text

# Background and questions

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- ❑ Background and research problem:
  - What is the problem?
  - Why is it important?
  - What has been done?
  
- ❑ This section is also known as the **motivation**
- ❑ **Motivation** determines the research significance of this paper

# Background and questions

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- ❑ **The introduction is neither a historical review, nor a literature review!**
  - **Space is precious**, so don't waste too much space to introduce the development history of this direction. Related literature can be put in the part of Related Work.
  - **The reader** is usually a peer or even an expert in this field, and too much nonsense can be repugnant.
  - If there is no separate section on related work, then a **brief introduction** of representative work in this direction can be made, focusing on the advantages and disadvantages of these works.

# Background and questions

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## □ Keep it short

- The following is the first paragraph of the introduction to a conference paper. There are only **two sentences**.
- The first sentence gives the **problem** and **importance**: wireless networks are indispensable.
- The second sentence gives the **shortage of existing works**: the bottleneck of wireless throughput.

***Indirect memory access widely exists modern graph analysis and sparse linear algebra applications. It often causes poor memory locality, resulting in frequent cache misses that cause a critical bottleneck for modern CPUs.***



# Methods

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- ❑ **The research methods:**
  - Briefly introduce the **core idea** and methods
  - **Examples** are preferred.

Introduce the problem, and your  
idea, using

**EXAMPLES**

and only then present the general  
case

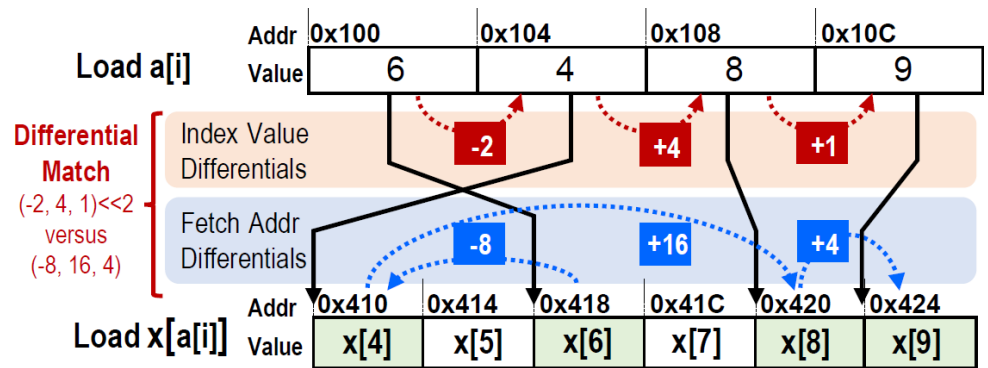
# Methods

## Differential-Matching Prefetcher for Indirect Memory Access

Gelin Fu<sup>†</sup>, Tian Xia<sup>†</sup>, Zhongpei Luo, Ruiyang Chen, Wenzhe Zhao, Pengju Ren  
Xi'an Jiaotong University

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access addresses. Fig. 2 depicts the fundamental principle of our method to detect the indirect pattern  $x[a[i]]$ . Specifically, we observe the load instructions to fetch  $a$  and  $x$  respectively, tracing the differential sequence of fetched  $a$  values as well as the differential sequence of addresses of  $x$ . When the sequences are matched with each other, the pattern of  $x[a[i]]$  is detected. For ranged indirect accesses of  $\{x[a[i]], x[a[i] + 1], x[a[i] + 2] \dots\}$ , the differential sequence skips the consecutive fetch addresses of  $x$ , so that the relationship between index values of  $a$  and fetch addresses of  $x$  can still be detected. Moreover, for  $y[x[a[i]]]$ , we can further match the values of  $x$  with the addresses of  $y$  to detect multi-level indirect access patterns. By iteratively repeating this matching process, we can fully detect complicated indirect access patterns. Furthermore, a dedicated prefetching unit with an adaptive prefetching degree is proposed to generate efficient prefetch requests for complicated indirect access patterns.



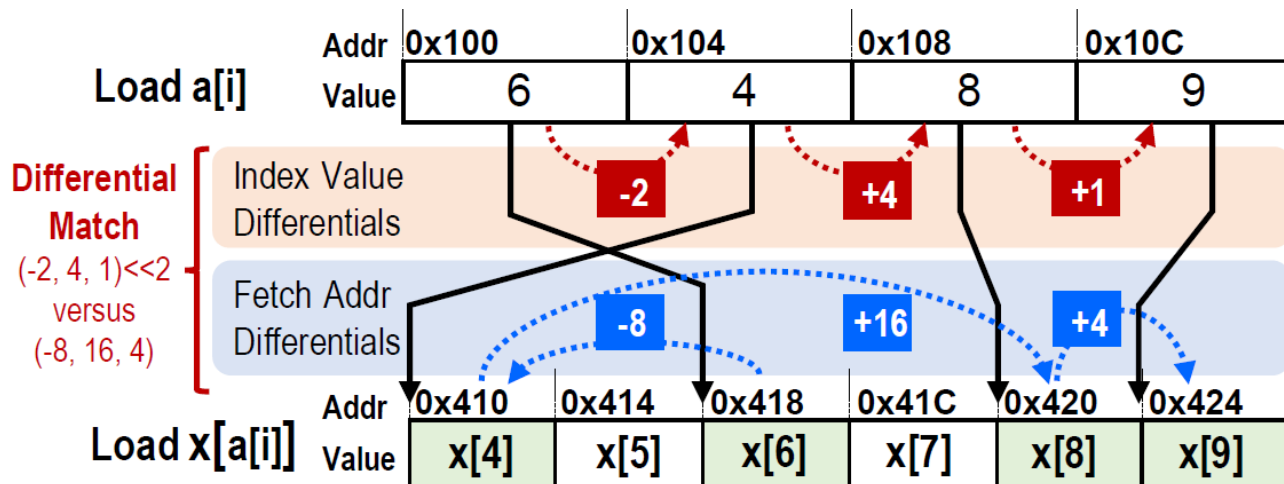
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# Contribution and innovation

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- List important **achievements** and **innovations**
  - A **new** question was posed for **the first time**:
  - To the best of our knowledge, we are **the first** to introduce/study the problem of XXX.
  - A **new** algorithm/mechanism is proposed/implemented:
  - We propose/design/implement a **new** algorithm/scheme/protocol to XXX.
  - Theoretical analysis/experimental verification:
  - We do analysis/experiments to demonstrate XXX.
- **Be clear**. Don't let the reader find or guess!

# Organization

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- ❑ Explain the organization of the full text, so that readers can understand the structure of the full text clearly
- ❑ Pay attention the **transformation** of words and sentence patterns, to avoid **repeated expressions**.
- ❑ **Active tense** is preferred.
- ❑ This part is **optional**, you can make the choice according to the content of the article

The rest of the paper is organized as follows. **Section 2 motivates Maple using an example.** **Section 3 gives** an overview of Maple architecture. **Sections 4 and 5 present** the details of the optimizer and scheduler, respectively. **We present evaluations in Section 6,** **discuss related work in Section 7,** and **conclude in Section 8.**

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# **Materials and Methods (M&M)**

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# Objectives of M&M section

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- ❑ Should be the **largest part** in paper (except for evaluations)
  - ❑ Provide a **clearly report** for the proposed methodology and procedures
  - ❑ Provide **enough details** so your experiments can be repeated
-

# Steps for an effective M&M section

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## Before writing:

- ❑ **Make a scheme** for the entire section
  - ❑ **Order contents** either
    - **Temporally**: show how the methodology **evolves** to address challenges
    - **Spatially** (Logically): show how **each part** addresses different challenges
  - ❑ Use **subsection**/subheading for easier reading, but should be as **simple** as possible.
  - ❑ Explain **how and why** each method was designed. Cite any previously published techniques
-



# Steps for an effective M&M sections

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## When writing:

- ❑ **Make things easy** to understand!
  - ❑ Use a **flowchart** or a **summary** section with detailed steps to help readers follow your method
  - ❑ Write a **summary sentence** for each subsection.
  - ❑ **Equations:**
    - Define all **symbols**
    - Do NOT use the **same symbol** for different quantities
    - If different **terms** are involved, give explanations for each
  - ❑ Clearly define **parameters** in your methods——allow others to repeat your results
  - ❑ Separate methods from **results**
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# Steps for an effective M&M section

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## After Writing:

- Complete section and **take a break**
  - **Review** and **Revise**
    - Did I understand what I wrote?
    - Is that what I meant to convey and could I say it better?
    - Am I able to repeat the experimental procedure?
  - **Rewrite**
  - **Share** your section with a peer/colleague for feedback
-

# Mistakes to avoid

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- ❑ Providing the reader with **unnecessary details**
  - ❑ Let reviewers/readers guess or work **too hard to understand** methods.
  - ❑ Use **unmentioned** concepts, parameters or terms as though they are known to the readers.
  - ❑ **Discussing results**
  - ❑ Providing **background** information
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**Thank you!**

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