如何開始你的研究論文之路

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Sep. 10, 2014

Speech outline

- 認識學術英文寫作

- 準備開始你的研究寫作之路

學術英文寫作
academic writing (AW)

- 課堂作業 (class reports)
- 技術報告 (technical report)
- 碩/博士論文(thesis/dissertation)
- 會議論文摘要/報告 (Conference abstract/ paper)
- 期刊論文 (journal papers/articles)
- 學術書籍 (Book/book chapters)

Important characteristics of AW

- 閱讀對象 (Audience)
- 目的 (Purpose)
- 架構 (Organization)
- 風格 (Style)
- 寫作流程 (Flow)
- 呈現與表達 (Presentation)

Cited from Swales & Feak (2004)

Audience, purpose & strategy

- Audience knows less than you

  →Your purpose tends to be instructional

- Audience knows more than you

  →You tends to display familiarity, expertise, and intelligence.

organization

- Problem-solving pattern
  - Description of a situation
  - Identification of a problem
  - Description of a solution
  - Evaluation of the solution
- Comparison-contrast
- Cause-effect
- classification

Organization of research paper
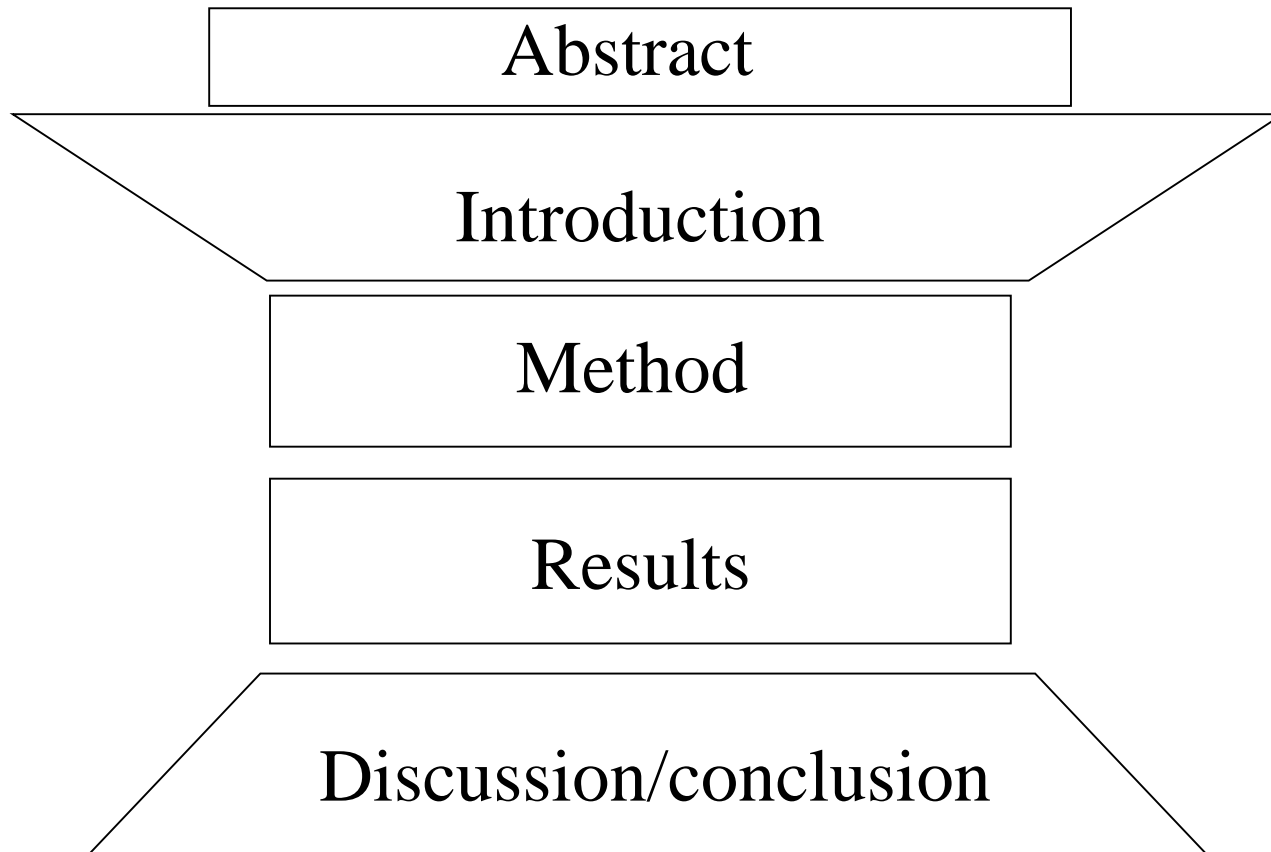
Abstract

Introduction

Method

Results

Discussion/conclusion

A vignette of an AW

Post-Silicon Code Coverage for Multiprocessor System-on-Chip Designs

Kyle Balston, *Student Member*, *IEEE*,
Mehdi Karimibiuki, *Student Member*, *IEEE*,
Alan J. Hu, *Member*, *IEEE*,
André Ivanov, *Fellow*, *IEEE*, and
Steven J.E. Wilton,
Senior Member, *IEEE*

Abstract—Effective techniques for post-silicon validation are required to better evaluate functional correctness of increasingly complex multi and many-core SoCs. However, there is little data evaluating the coverage of post-silicon validation efforts on industrial-scale designs. In this paper, we address this knowledge gap by instrumenting a nontrivial SoC with on-chip coverage monitors to measure the coverage achieved by typical post-silicon validation tests, such as booting the operating system (OS). We compare coverage achieved pre and post-silicon, and also measure the area overhead required to monitor post-silicon coverage. Our results show that the typical test of booting the OS often achieves high coverage, well correlated to what is achieved by pre-silicon directed tests, but in some blocks the coverage can be low or markedly different between pre and post-silicon, highlighting the importance of post-silicon validation in general and post-silicon coverage measurement in particular.

Index Terms—FPGA emulation, pre-silicon validation, post-silicon validation, code coverage

———————————— ✦ ————————————

1   INTRODUCTION

In pre-silicon validation, *coverage* is the primary metric of validation effectiveness. However, there is almost no data evaluating the coverage of post-silicon validation efforts on industrial-scale designs: in industry, there is rarely time or budget to experiment with extra on-chip hardware to measure coverage; and in academia, there are rarely industrial-scale designs running in silicon. We are aware of only two exceptions: [4], [6]. In [6], Bojan et al. report post-silicon coverage monitoring on Intel's Core 2 Duo processor family, but due to the constraints of minimizing on-chip monitoring overhead, only very minimal coverage information was extracted. In [4], Adir et al. add coverage monitors for runs during pre-silicon acceleration, giving a good estimate of the coverage achievable by the same tests post-silicon. However, the area overhead of implementing these coverage monitors was not evaluated and some details were considered proprietary and not disclosed.

This paper addresses this lack of data, continuing in the spirit of [4]. We carry forward basic principles from software code coverage and adapt them to post-silicon coverage. As a research testbed, we have a small, but industrial-scale multiprocessor System-on-Chip (MPSoC), running on an FPGA. We instrument several IP blocks of the SoC to monitor actual code coverage as the hardware runs in both multiprocessing-aware and -unaware modes, and we compare this coverage to that achieved in pre-silicon simulation. We also measure the area overhead of this coverage instrumentation, and then apply state-of-the-art techniques from software analysis to reduce this overhead.

A preliminary version of this paper was presented in [10], where we reported coverage measurements on a single-CPU SoC. Given the growing prevalence of MPSoCs, this paper extends the previous work to the analogous results for a dual-CPU SoC, with a multiprocessing-aware and -unaware OS. The results are also

Post-Silicon Code Coverage for Multiprocessor System-on-Chip Designs

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The college majors most and least likely to lead to underemployment

Employees with degrees in fields like English, general studies, and graphic design are among the most likely to report feeling "underemployed" at their current jobs. This is according to a recent survey of 68,000 workers by salary information firm PayScale.

Liberal arts majors (I'm one of them!) are used to being the punchline in jokes about un- and underemployment. But more unexpectedly, majorities of graduates with more "practical" degrees in fields like business administration also said their jobs didn't put their education, training or experience to work as much as they should.

(retrieved Aug. 27, 2014, Washington Post)

Why Is Academic Writing So Academic?
(Joshua Rothman, Washington Post, Feb. 20, 2014)

A few years ago, when I was a graduate student in English, I presented a paper at my department's American Literature Colloquium. (A colloquium is a sort of writing workshop for graduate students.) The essay was about Thomas Kuhn, the historian of science. Kuhn had coined the term "paradigm shift," and I described how this phrase had been used and abused, much to Kuhn's dismay, by postmodern insurrectionists and nonsensical self-help gurus. People seemed to like the essay, but they were also uneasy about it. "I don't think you'll be able to publish this in an academic journal," someone said. He thought it was more like something you'd read in a magazine.

style

- Formal
- Concise
- Precise
- Impersonal
- Sophisticated
- Specialized

Flow

- Successful communication also relies on logic flow, which means that moving one statement to the next make sense and reasonable.

A.

Lasers have found widespread application in medicine. Lasers play an important role in the treatment of eye disease and the prevention of blindness. The eye is ideally suited for laser surgery. Most of the eye tissue is transparent. The frequency and focus of the laser beam can be adjusted according to the absorption of the tissue. The beam "cuts" inside the eye with minimal damage to the surrounding tissue –even the tissue between the laser and the incision. Lasers are effective in treating some causes of blindness. Other treatments are not. The interaction between laser light and eye tissue is not fully understood.

B.

Lasers have found widespread application in medicine. For example, they play an important role in the treatment of eye disease and the prevention of blindness. The eye is ideally suited for laser surgery because most of the eye tissue is transparent. Because of this transparency, the frequency and focus of the laser beam can be adjusted according to the absorption of the tissue so that the beam "cuts" inside the eye with minimal damage to the surrounding tissue –even the tissue between the laser and the incision. Lasers are also more effective than other methods in treating some causes of blindness. However, the interaction between laser light and eye tissue is not fully understood.

presentation

1. Does the format of your written work match the requirement (of your class instructor, the form of a thesis/dissertation, the journal)?

2. Do you proofread for

   – basic grammar mistakes?

   – Misspelled words

   – Incorrect homophone

開始你的研究寫作之路

Ching-Fen Chang

Organization
research paper/thesis/dissertation/conference paper

Abstract

Introduction

Method

Results

Discussion/conclusion
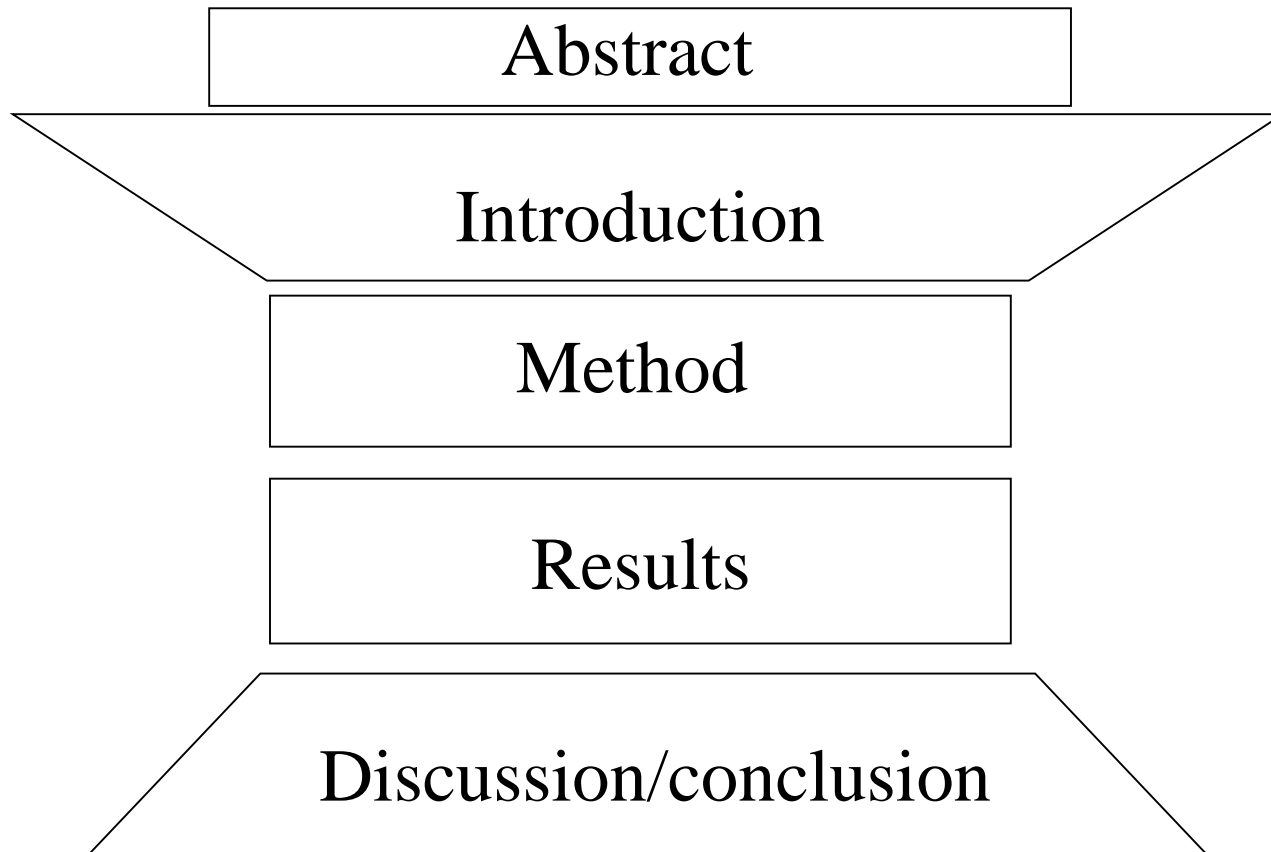
Rhetorical moves (文步)

Moves, functional components, or information unit, are communicative purposes of text producer

Knowing these moves or components, you can easily find the patterns in each section of a research papers.

Ching-Fen Chang

課程: NCTU Writng　cfchang.nctu.edu.tw/n
cfchang.nctu.edu.tw/moodle/file.php/3/course/Move_Pattern/introduction/introduction/13P0312-intro.pdf
應用服務　Disney's Frozen…　Gmail　Asia TEFL　網頁快訊圖庫　從 IE 匯入　博客來 確認購…　聽忍太郎講五…　Is There a Reas…　其他書籤

1 INTRODUCTION

THE conventional wisdom in the field of statistical pattern recognition (SPR) regarding the uncertainties in estimates of the performance of classifiers trained and tested with a finite number of samples may be summarized as follows: The *bias* of measures of performance comes only from the finite size of the training sample; the sampling *variance* (and, thus, the error bars) of these measures comes mainly from the finite number of test samples [1, p. 218]. The validity of this wisdom regarding the bias of accuracy measures is well-established [1], [2], [3], [4], [5], [6], [7]. The purpose of this paper is to investigate the issue of the variance using a general multivariate statistical model.

Analysis of the variability in estimates of the performance of classifiers trained and tested with a finite number of samples has been provided by Fukunaga and Hayes [2], [3] and extensive reviews of the problem have been given by Fukunaga [1], Raudys and Jain [4], and Jain et al. [5], with further elaboration by Raudys [6]. The focus of this analysis was on the case where only a single classifier is under evaluation. In this paper, we provide a more general treatment for the case of either a single or of two competing classifiers. We shall see in the light of the present work that some previous summary rules of thumb regarding the variability of estimates have only a narrow range of applicability.

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- The authors are listed alphabetically.

Results of any statistical assessment must be accompanied by a statement of the level of "generalizability" of the results. We define the levels of generalizability in the context of SPR as follows: If performance is estimated in such a way that the effect of the finite number of test samples is explicitly accounted for in the analysis but not the effect of the finite number of training samples, one says that performance estimates "generalize only to a population of testers." The mean and error bars obtained from such analysis are estimates of the range of performance expected if the experiment is repeated many times, drawing independently from a population of testers on each replication but without varying the training. If performance is estimated in such a way that the finite number of training samples as well as the finite number of test samples is accounted for in the analysis, one says that performance estimates "generalize to a population of trainers and a population of testers." The uncertainties are then estimates of the range of performance expected if the experiment is repeated many times, each time drawing independently from a population of trainers as well as testers.

An analogous problem and set of issues have been the subject of contemporary research in the field of medical imaging [8], [9], [10], [11]. This problem gave rise to the development of the field of random-effects (or multivariate) receiver operating characteristic analysis. In the next section, we will provide the general random-effects model for the context of SPR. In following sections, we analyze several problems that display the general structure of this problem and compare the results with previous expectations. The results have implications for the methods of resampling used in uncertainty analysis in SPR that we discuss in the concluding section.

division operations, with a very low latency and reasonable hardware requirements. The second proposed architecture also deals with the computation of square root and inverse square root, with an increased latency (but still a fast execution time compared with previous methods) and about the same amount of hardware as the first scheme. The modification performed in the Goldschmidt iteration for computing square root and inverse square root allows the reutilization of the logic blocks employed in the first architecture, saving an important amount of area.

The rest of this paper is structured as follows: In Section 2, a brief description of the algorithm is presented, including an overview of the second-degree minimax approximation; the two unfolded architectures are proposed and implementation details are explained in Section 3; estimates of the execution time and hardware requirements for our proposed architectures are presented and a comparison with some previous multiplicative-based methods is outlined in Section 4; finally, the main contributions made in this work are summarized in Section 5.

2 ALGORITHM

The method proposed in this paper deals with the computation of the reciprocal function $(1/X)$, division (Y/X), square root $(\sqrt{X})$, and inverse square root $(1/\sqrt{X})$ for input operands in the IEEE double-precision floating-point format. With this format, a floating-point number M is represented using a sign bit s_m, an 11-bit biased exponent e_m, and a 53-bit significand X. If M is a normalized number, it represents the following value:

$$M = (-1)^{s_m} \times (1 + f_m) \times 2^{e_m - 1023},$$

where $X = 1 + f_m$, $1 \leq X < 2$, and f_m is the fractional part of the normalized number (the 52-bit stored word).

The computation of these functions is performed only for the input significand, $Z = f(X)$, since the sign and exponent treatment is straightforward and can be performed in parallel.

Our method consists of the following steps:

- Computing an initial approximation $R_f \approx f(\hat{X})$, with $\hat{X}$ a truncated version of the input operand, accurate to 30 bits for the reciprocal and to 29 bits for the inverse square root,[1] by employing a second-degree minimax polynomial approximation.
- Performing a modified Goldschmidt iteration, employing R_f as a seed, to produce the final double-
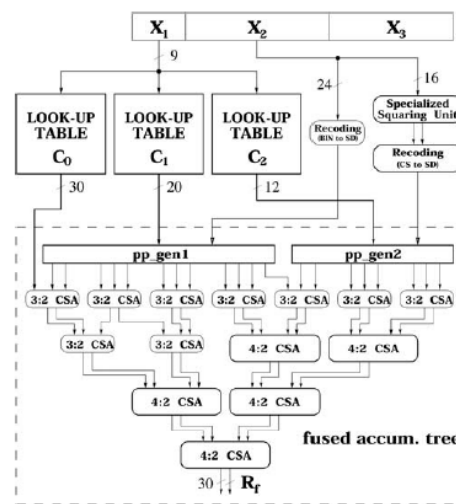
Fig. 1. Block diagram of the second-degree minimax approximation R_f.

2.1 Second-Degree Minimax Polynomial Approximation

A new method for the computation of powering function (X^p), in a single-precision floating-point format, by means of a second-degree minimax polynomial approximation with table look-up and multioperand accumulation, has been proposed in [20]. This algorithm allows an important reduction in the total area regarding linear approximations, with no delay increase. It combines the speed of first-degree approximation methods [23] and the reduced size of second-degree interpolation algorithms [1], [10].

Since reciprocal and inverse square root functions are specific cases of powering, this second-degree approximation can be effectively employed to obtain accurate initial estimates for both functions. These estimates are the seed values required for the modified Goldschmidt algorithms ($R_d = 1/\hat{X}$ will be the 30-bit seed value for division and reciprocal computation, while $R_s = 1/\sqrt{\hat{X}}$ will be the 29-bit initial value employed for the square root and inverse square root computation).

Since the minimax approximation is known to be the

Architecture and Implementation of a Vector/SIMD Multiply-Accumulate Unit

Albert Danysh, *Member, IEEE*, and Dimitri Tan, *Member, IEEE*

Abstract—This paper presents a 64-bit fixed-point vector multiply-accumulator (MAC) architecture capable of supporting multiple precisions. The vector MAC can perform one 64×64, two 32×32, four 16×16, or eight 8×8 bit signed/unsigned multiply-accumulates using essentially the same hardware as a scalar 64-bit MAC and with only a small increase in delay. The scalar MAC architecture is "vectorized" by inserting mode-dependent multiplexing into the partial product generation and by inserting mode-dependent kills in the carry chain of the reduction tree and the final carry-propagate adder. This is an example of "shared segmentation" in which the existing scalar structure is segmented and then shared between vector modes. The vector MAC is area efficient and can be fully pipelined, which makes it suitable for high-performance processors and, possibly, dynamically reconfigurable processors. The "shared segmentation" method is compared to an alternative method, referred to as the "shared subtree" method, by implementing vector MAC designs using two different technologies and three different vector widths.

Index Terms—Parallel, high-speed arithmetic, multimedia, data-path design, VLSI, MAC, multiply-accumulate, multiplier, vector, SIMD, Booth, Wallace, signed, unsigned, integer, fixed-point.

◆

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1 INTRODUCTION

THE addition of vector capabilities to a processor architecture can provide a significant boost in performance for multimedia type applications [1], [2], [3]. However, adding these capabilities can be expensive in the MAC using the new shared segmentation method and an existing method called the shared subtree method [12]. Section 3 briefly discusses the other alternative methods for implementing vector MACs or multipliers that exist in the literature. Section 4 presents delay and area results for vector MAC implementations using the shared segmenta

Moves/sections	A	I	M	R	D	C
B (background information)	AB	IB	MB			CB
P (purposes or major tasks)	AP	IP	MP	RP	DP	CP
M (methods or theories)	AM	IM	MM			CM
R (results)	AR	IR		RR		CR
D (explanations, implications, comparisons, limitations)			MD		DD	CD
C (partial or complete conclusions, evaluation)	AC	IC	MC	RC	DC	CC
L (literature review or reference to other studies)	AL	IL	ML	RL	DL	CL
O (local or global organization)		IO	MO	RO	DO	
G (gap or missing information)	AG	IG	MG			
F (reference to tables or figures)		IF	MF	RF		
J (justification and reasons)		IJ	MJ			
Moves in individual sections						
IQ (research questions)		IQ				
IV (values)		IV				
MS (populations, samples, or subjects)			MS			
MA (assumptions, conditions, criteria, or hypotheses)			MA			
MPo (procedure)			MPo			
MMl (equipment or materials)			MMl			
ME (definitions, variables, equations, or measurement)			ME			
MT (tests)			MT			
CF (recommendations or further research)						CF

A: Abstract   I: Introduction   M: Materials and Methods
R: Results   D: Discussions   C: Conclusions

Post-Silicon Code Coverage for Multiprocessor System-on-Chip Designs

Abstract—Effective techniques for post-silicon validation are required to better evaluate functional correctness of increasingly complex multi and many-core SoCs. However, there is little data evaluating the coverage of post-silicon validation efforts on industrial-scale designs. In this paper, we address this knowledge gap by instrumenting a nontrivial SoC with on-chip coverage monitors to measure the coverage achieved by typical post-silicon validation tests, such as booting the operating system (OS). We compare coverage achieved pre and post-silicon, and also measure the area overhead required to monitor post-silicon coverage. Our results show that the typical test of booting the OS often achieves high coverage, well correlated to what is achieved by pre-silicon directed tests, but in some blocks the coverage can be low or markedly different between pre and post-silicon, highlighting the importance of post-silicon validation in general and post-silicon coverage measurement in particular.

Academic writing style

- The vocabulary shift
- More formal nouns and part of speech
- Formal grammar style

Ching-Fen Chang

Vocabulary shift– **single verbs**

Phrasal verbs/prepositional verb	Single verb
According to some biologists, <u>coming up with</u> clear proof of the decreasing numbers of frogs has been difficult.	According to some biologists, _____ clear proof of the decreasing numbers of frogs has been difficult.
The purpose of this paper <u>is to try to figure out</u> what is lacking in our current understanding of corrosion and corrosion protection in concrete.	The purpose of this paper _____ to _____ what is lacking in our current understanding of corrosion and corrosion protection in concrete.

Vocabulary shift—**reporting verbs**

- John **told** me he was going to stay late at work.
- Peter **said** he wanted to visit his parents that weekend.

- The remainder of this paper **is organized** as follows: Section 2 **describes** the basic architecture of a 64-bit scalar MAC and explains the modifications required to "vectorize" the MAC using the new shared segmentation method and an existing method called the shared subtree method [12]. Section 3 **briefly discusses** the other alternative methods for implementing vector MACs or multipliers that exist in the literature. Section 4 **presents** delay and area results for vector MAC implementations using the shared segmentation method and the shared subtree method, along with …

Formal vocabulary

Crash test dummies are	☐ really important for ☐ an integral part of	automotive crash tests.
There has been	☐ a lot of ☐ considerable	interest in how background sounds such as music affect an individual's ability to concentrate.
Allergic reactions to local dental anesthesia	☐ do not happen very often. ☐ _____	

Collocation of words

- With social networking sites _____ an increasingly important role in today's society...

- The study _____ on the perspectives of the students, the instructor and an outside observer to explore the intended and unintended outcomes of *Ning* use.

- The scheduling logic accounts for the majority of the chip area, with the packet memory consuming much of the remaining space, as _____ in Table 5.

Free online collocation tool

http://collocation.stringnet.org/

collocation.stringnet.org/explorer.php?page=1&FocalLemma=role&FocalSPOS=noun&sltScoreType=mi&sltScoreThreshold=1.0&sltCoFreqThreshold=5&rdoDirection=-1&preSPOS=verb&next

▶ Disney's Fro···　M Gmail　⟳ Asia TEFL　🗋 網頁快訊···　🗋 從 IE 匯入　🗋 博客來 確···　■快分享給···　■ 愛做飯的···　◆ 相信我，···　🗋 歡迎光臨 ···　🗋 聽忍太郎···　🔟 有. 設計uD···　»　□ 其他書籤

🔤 此網頁為 英文 ▾ 您要翻譯網頁內容嗎？　翻譯　不需要　永遠不要翻譯英文　　選項▾

Exploring Vocabulary: Collocation　　　　　　　　　　Help | Document | Back to Mainpage

主要字: role　　　noun 名詞 ▾　　Traditional MI ▾　　1.0 ▾　　5 ▾

1. 主要字前 ⟳ verb 動詞 ▾　　　　　　　　2. 主要字後 ⟳ verb 動詞 ▾

搜尋搭配字

下列主要字搜尋結果: " role(noun)(20511) in 98363707 words corpus"　　　　主要字前的verb 共約有 246 項查詢結果 共花費0秒

1. fulfill(verb)(62) ... role(noun)(20511) ... (7) (9.029806294519911)

The TV set was beginning to **fulfill** the **roles** of third parent , surrogate husband , and surrogate wife . (more...)

2. usurp(verb)(161) ... role(noun)(20511) ... (16) (8.845730804734567)

It will be humbled , and may even find that the EC monetary committee — which consists of mere central-bank and finance-ministry officials — will **usurp** its preparatory **role** for meetings of finance ministers . (more...)

3. audition(verb)(143) ... role(noun)(20511) ... (11) (8.476207964708092)

Manipulating a lump of putty from finger to finger , hand to hand , he looked as if he was **auditioning** for the lead **role** in The Caine Mutiny . (more...)

4. play(verb)(37158) ... role(noun)(20511) ... (2666) (8.375723516499475)

An ACET-link will **play** a vital **role** as our work is growing so rapidly . (more...)
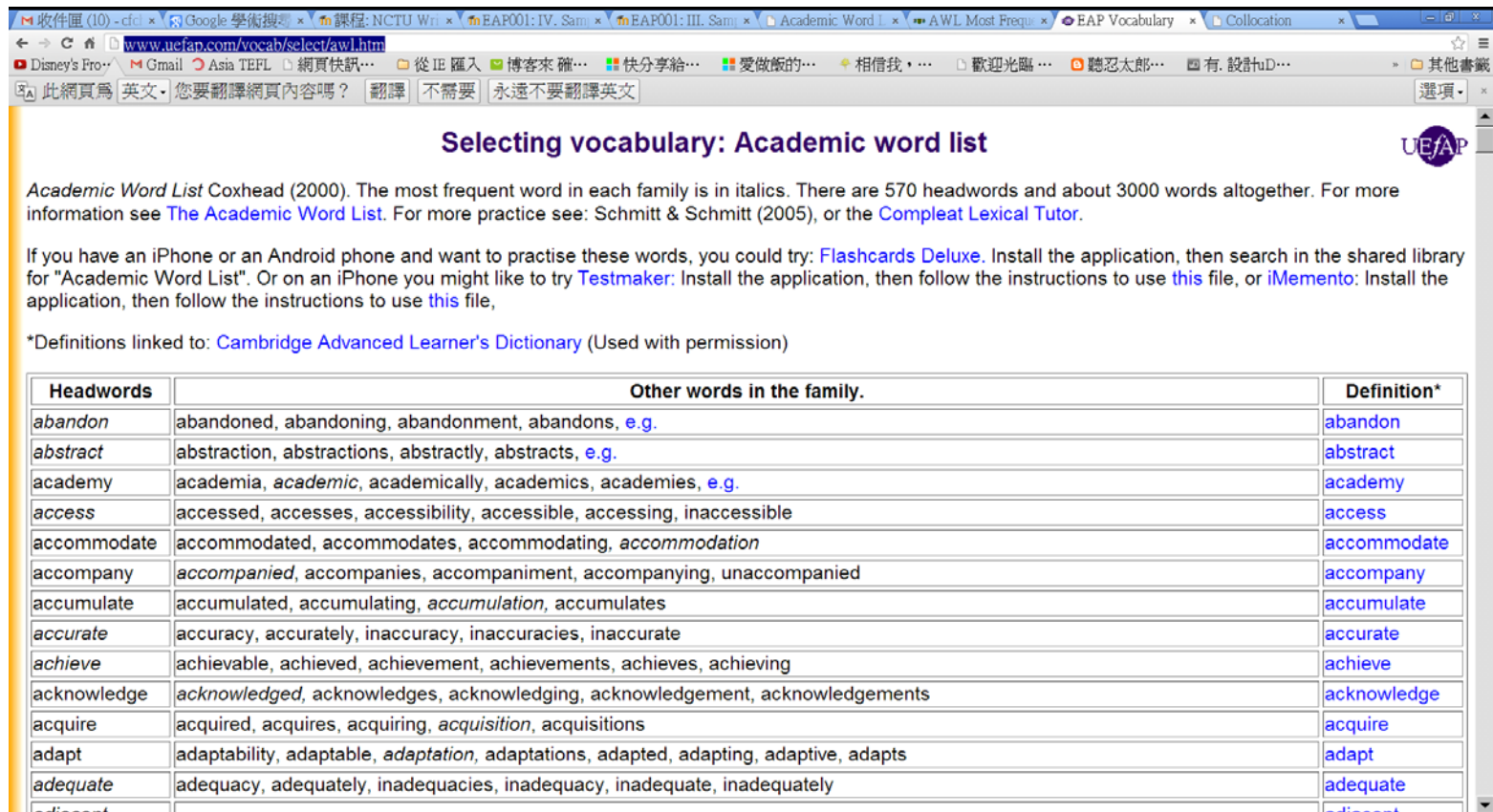
5. fulfil(verb)(2559) ... role(noun)(20511) ... (181) (8.355129137892943)

All consciousness does in its own right is to tell us that it is something

High-frequency academic words

- Academic word list

  http://www.uefap.com/vocab/select/awl.htm

Selecting vocabulary: Academic word list

Academic Word List Coxhead (2000). The most frequent word in each family is in italics. There are 570 headwords and about 3000 words altogether. For more information see The Academic Word List. For more practice see: Schmitt & Schmitt (2005), or the Compleat Lexical Tutor.

If you have an iPhone or an Android phone and want to practise these words, you could try: Flashcards Deluxe. Install the application, then search in the shared library for "Academic Word List". Or on an iPhone you might like to try Testmaker: Install the application, then follow the instructions to use this file, or iMemento: Install the application, then follow the instructions to use this file,

*Definitions linked to: Cambridge Advanced Learner's Dictionary (Used with permission)

Headwords	Other words in the family.	Definition*
abandon	abandoned, abandoning, abandonment, abandons, e.g.	abandon
abstract	abstraction, abstractions, abstractly, abstracts, e.g.	abstract
academy	academia, academic, academically, academics, academies, e.g.	academy
access	accessed, accesses, accessibility, accessible, accessing, inaccessible	access
accommodate	accommodated, accommodates, accommodating, accommodation	accommodate
accompany	accompanied, accompanies, accompaniment, accompanying, unaccompanied	accompany
accumulate	accumulated, accumulating, accumulation, accumulates	accumulate
accurate	accuracy, accurately, inaccuracy, inaccuracies, inaccurate	accurate
achieve	achievable, achieved, achievement, achievements, achieves, achieving	achieve
acknowledge	acknowledged, acknowledges, acknowledging, acknowledgement, acknowledgements	acknowledge
acquire	acquired, acquires, acquiring, acquisition, acquisitions	acquire
adapt	adaptability, adaptable, adaptation, adaptations, adapted, adapting, adaptive, adapts	adapt
adequate	adequacy, adequately, inadequacies, inadequacy, inadequate, inadequately	adequate
adjacent		adjacent

Formal grammar style

1. Avoid contractions
2. Use more formal negative forms
3. Limit the use of "run-on" expressions
4. Avoid addressing the reader as *you*
5. Be careful about using direct questions
6. Place adverbs within the verb
7. Aim for an effective use of words

Studies on this issue haven't been examined.	→	Studies on this issue have not been examined.
The analysis didn't yield any new results	→	
This problem doesn't have many viable solutions.	→	
These semiconductors can be used in robots, CD players, etc.	→	
You can see the results in Figure 1.	→	
What can be done to solve the problem?	→	
Actually , very little is known about the general nature and prevalence of scientific dishonesty.	→	
There are some inorganic materials that can be used by bioengineers in the process of tissue engineering that have been shown to be very promising.	→	

Impersonal structure

Avoid personal involvement in sentences

1. passive structures (omit by + noun)

2. *it*-structures

3. inanimate subjects with active verbs

Ching-Fen Chang

Passive structure (被動語態)

We observed this component to be the major consumer of datapath energy.	
The optimization of multiple response problems in the Taguchi method is achieved by the propose procedure.	

It-structure

It is + adjective + *to* + verb

- For data traffic, it is clearly desirable to use a simple, but fast, VC rerouting policy.

It + (*is* + adjective/participle) / verb + *that*-clause

- From the figures, it is clear that for shorter duration calls using either of the policies gives comparable path delay degradations.

- It is assumed that all nodes have synchronized clocks.

inanimate subjects with active verbs

- These microarchitectures split programs into speculative threads and, then, they execute them concurrently.

*However, this structure does not apply to every inanimate subject. For example, in the following sentence, the verb must be in passive.

- In this work, several hardware-based schemes for partitioning the program into speculative threads are analyzed and evaluated.

This + summary words

1. Population homeostasis is common among many animals. If food supplies are short, for instance, mice reduce their numbers. _____ shows the need of any living substance to maintain internal constancy and independence of the environment.

2. The number of road accidents in this city in 1990 was 25. It rose to 30 in the next year. In 1992, shockingly, ten more accidents were reported. _____ is an indication of serious traffic problems.
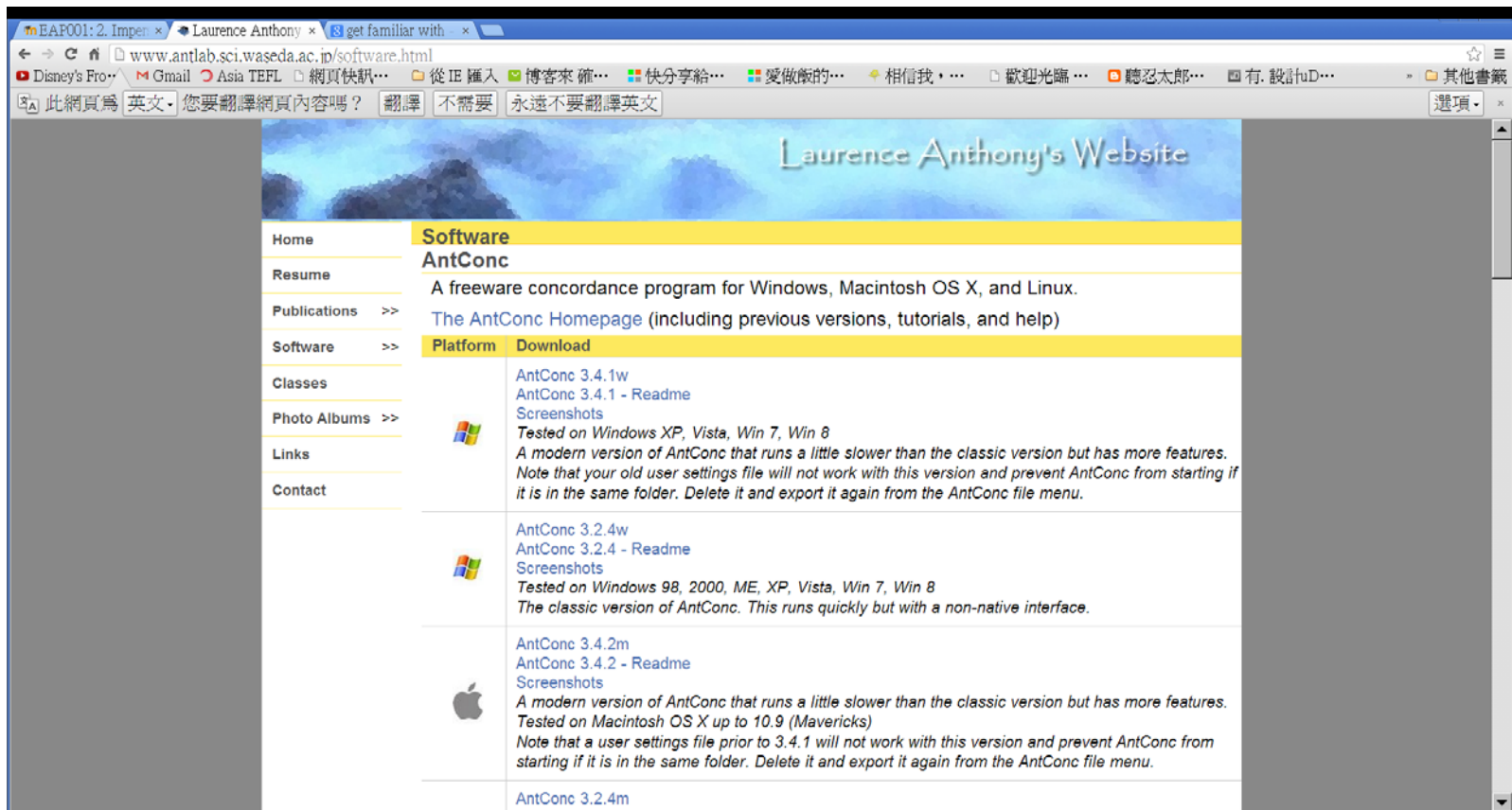
熟悉你領域的論文寫作風格

a corpus-based approach
to get familiar with the AW style
in your field

Compile your own corpus

AntConc

http://www.antlab.sci.waseda.ac.jp/software.html

Compile papers from your field
Convert the PDF into TXT version

concordance

Word list

AW courses in LTRC

《寫作中心》課程表

學期別	課號	永久課號	摘要	課程名稱	人數上限	修課人數	上課時間及教室	學分	時數	開課教師	選別
				備註							
103上	7901	DFR6004		研究生英文:句法與段落寫作	25	23	1CD-圖B1	2	2	吳思葦	外語
		[圖書館B1自習中心]此課程僅供研究生選修,不列入畢業學分。									
103上	7902	DFR6004		研究生英文:句法與段落寫作	25	16	2CD-A308	2	2	吳思葦	外語
		此課程僅供研究生選修,不列入畢業學分。									
103上	7903	DFR6004		研究生英文:句法與段落寫作	25	25	3EF-圖B1	2	2	秦毓婷	外語
		此課程僅供研究生選修,不列入畢業學分。圖書館B1自習中心									
103上	7904	DFR6005		研究生英文:研究論文寫作	25	25	1EF-A405	2	2	林淑敏	選修
		此課程僅供研究生選修,不列入畢業學分									
103上	7905	DFR6005		研究生英文:研究論文寫作	25	20	5CD-A508	2	2	張月菁	外語
		此課程僅供研究生選修,不列入畢業學分。									
103上	7906	DFR6006		研究生英文:口語討論與發表	25	16	1EF-圖B1	2	2	李麥德	外語
		[圖書館B1自習中心]此課程僅供研究生選修,不列入畢業學分。[English Medium Course]									
103上	7907	DFR6006		研究生英文:口語討論與發表	25	25	2GH-圖B1	2	2	秦毓婷	外語
		此課程僅供研究生選修,不列入畢業學分。圖書館B1自習中心									

語言教學與研究中心
推廣教育「科技英文學分班」

研究論文寫作

新竹光復校區（週三）–語言中心助理教授<u>林淑敏</u>

基礎科技英文句法與段落寫作

- 新竹光復校區（週四）–語言中心講師<u>秦毓婷</u>
- 台北校區（週三）–語言中心助理教授<u>陳惠如</u>

上課時間:18:30~20:20

Thank you for your great participation!

good luck to your study in NCTU & writing for academic papers!!

張靜芬

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