

Piled Higher and Deeper - Life (or the lack thereof) in Academia



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PhD Thesis

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Chapter 1

Background

1.1 What is Lorem Ipsum?

Lorem Ipsum is simply dummy text of the printing and typesetting industry section 1.3. Lorem IpsumAgnolin and Roux (2007) has been the industry's standard dummy text ever since the 1500s, when an unknown printer took a galley of type and scrambled it to make a type specimen book. It has survived not only five centuries, but also the leap into electronic typesetting, remaining essentially unchanged. It was popularised in the 1960s with the release of Letraset sheets containing Lorem Ipsum passages, and more recently with desktop publishing software like Aldus PageMaker including versions of Lorem Ipsum.

1.2 Why do we use Lorem Ipsum?

It is a long established fact that a reader will be distracted by the readable content of a page when looking at its layout. The point of using Lorem Ipsum is that it has a more-or-less normal distribution of letters, as opposed to using 'Content here, content here', making it look like readable English. Many desktop publishing packages and web page editors now use Lorem Ipsum as their default model text, and a search for 'lorem ipsum' will uncover many web sites still in their infancy. Various versions have evolved over the years, sometimes by accident, sometimes on purpose (injected humour and the like).

1.3 Where does it come from?

Contrary to popular belief, Lorem Ipsum is not simply random text. It has roots in a piece of classical Latin literature from 45 BC, making it over 2000 years old. Richard McClintock, a Latin professor at Hampden-Sydney College in Virginia, looked up one of the more obscure Latin words, consectetur, from a Lorem Ipsum passage, and going through the cites of the word in classical literature, discovered the undoubtable source. Lorem Ipsum comes from sections 1.10.32 and 1.10.33

of "de Finibus Bonorum et Malorum" (The Extremes of Good and Evil) by Cicero, written in 45 BC. This book is a treatise on the theory of ethics, very popular during the Renaissance. The first line of Lorem Ipsum, "Lorem ipsum dolor sit amet..", comes from a line in section 1.10.32.

The standard chunk of Lorem Ipsum used since the 1500s is reproduced below for those interested. Sections 1.10.32 and 1.10.33 from "de Finibus Bonorum et Malorum" by Cicero are also reproduced in their exact original form, accompanied by English versions from the 1914 translation by H. Rackham

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Section 1.10.32 of "de Finibus Bonorum et Malorum", written by Cicero in 45 BC: "Sed ut perspiciatis unde omnis iste natus error sit voluptatem accusantium doloremque laudantium, totam rem aperiam, eaque ipsa quae ab illo inventore veritatis et quasi architecto beatae vitae dicta sunt explicabo. Nemo enim ipsam voluptatem quia voluptas sit aspernatur aut odit aut fugit, sed quia consequuntur magni dolores eos qui ratione voluptatem sequi nesciunt. Neque porro quisquam est, qui dolorem ipsum quia dolor sit amet, consectetur, adipisci velit, sed quia non numquam eius modi tempora incidunt ut labore et dolore magnam aliquam quaerat voluptatem. Ut enim ad minima veniam, quis nostrum exercitationem ullam corporis suscipit laboriosam, nisi ut aliquid ex ea commodi consequatur? Quis autem vel eum iure reprehenderit qui in ea voluptate velit esse quam nihil molestiae consequatur, vel illum qui dolorem eum fugiat quo voluptas nulla pariatur?"

1914 translation by H. Rackham: "But I must explain to you how all this mistaken idea of denouncing pleasure and praising pain was born and I will give you a complete account of the system, and expound the actual teachings of the great explorer of the truth, the master-builder of human happiness. No one rejects, dislikes, or avoids pleasure itself, because it is pleasure, but because those who do not know how to pursue pleasure rationally encounter consequences that are extremely painful. Nor again is there anyone who loves or pursues or desires to obtain pain of itself, because it is pain, but because occasionally circumstances occur in which toil and pain can procure him some great pleasure. To take a trivial example, which of us ever undertakes laborious physical exercise, except to obtain some advantage from it? But who has any right to find fault with a man who chooses to enjoy a pleasure that has no annoying consequences, or one who avoids a pain that produces no resultant pleasure?"

Section 1.10.33 of "de Finibus Bonorum et Malorum", written by Cicero in 45 BC: "At vero eos et accusamus et iusto odio dignissimos ducimus qui blanditiis praesentium voluptatum deleniti atque corrupti quos dolores et quas molestias excepturi sint occaecati cupiditate non provident, similique sunt in culpa qui officia deserunt mollitia animi, id est laborum et dolorum fuga. Et harum quidem rerum facilis est et expedita distinctio. Nam libero tempore, cum soluta nobis est eligendi

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1914 translation by H. Rackham: "On the other hand, we denounce with righteous indignation and dislike men who are so beguiled and demoralized by the charms of pleasure of the moment, so blinded by desire, that they cannot foresee the pain and trouble that are bound to ensue; and equal blame belongs to those who fail in their duty through weakness of will, which is the same as saying through shrinking from toil and pain. These cases are perfectly simple and easy to distinguish. In a free hour, when our power of choice is untrammelled and when nothing prevents our being able to do what we like best, every pleasure is to be welcomed and every pain avoided. But in certain circumstances and owing to the claims of duty or the obligations of business it will frequently occur that pleasures have to be repudiated and annoyances accepted. The wise man therefore always holds in these matters to this principle of selection: he rejects pleasures to secure other greater pleasures, or else he endures pains to avoid worse pains."

Chapter 2

Generated Loren Ipsum

2.1 First Section

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Chapter 3

Chapter 2

If you are having trouble viewing the document please send an email to the computing officer: grad.computing@kings.cam.ac.uk

The college website can be found at <http://www.kings.cam.ac.uk>

King's College is a constituent college of the University of Cambridge, England. The college's full name is "The King's College of our Lady and Saint Nicholas in Cambridge", but it is usually referred to simply as "King's" within the University. Fig.3.1.

The college was founded in 1441 by King Henry VI, soon after its sister college in Eton. However, the King's plans for the college were disrupted by the civil war and resultant scarcity of funds, and his eventual deposition. Little progress was made on the project until in 1508 King Henry VII began to take an interest in the college, most likely as a political move to legitimise his new position. The building of the college's chapel, begun in 1446, was finally finished in 1544 during the reign of King Henry VIII. "The King's College of our Lady and Saint Nicholas in Cambridge", but it is usually referred to simply as "King's" within the University of Cambridge, England. King's College



Fig. 3.1: "The King's College of our Lady and Saint Nicholas in Cambridge", but it is usually referred to simply as "King's" within the University of Cambridge, England.

Chapel is regarded as one of the greatest examples of late Gothic English architecture. It has the

world's largest fan-vault, and the chapel's stained-glass windows and wooden chancel screen are considered some of the finest from their era. The building is seen as emblematic of Cambridge. The chapel's choir, composed of male students at King's and choristers from the nearby King's College School, is one of the most accomplished and renowned in the world. Every year on Christmas Eve the Festival of Nine Lessons and Carols (a service created by a Dean of King's especially for the college) is broadcast from the chapel to millions of listeners worldwide.

King's was founded in 1441 by King Henry VI. His first design was modest, but by 1445 was intended to be a magnificent display of royal patronage. There were to be a Provost and seventy scholars, occupying a substantial site in central Cambridge whose drastic clearance involved the closure of several streets. The college was granted a remarkable series of feudal privileges, and all of this was supported by a substantial series of endowments from the King.

King Henry VI had admired the achievements of William of Wykeham, who had founded the twin colleges of New College, Oxford (King's College's Sister College) and Winchester College in 1379. He subsequently modelled the establishment of King's and Eton College upon the successful formation of Wykeham's institutions. Indeed, the link that King's College and Eton College share is a direct copy of the link shared between New College and Winchester College. The four colleges continue to share formal ties to this day.

Originally, the college was to be specifically for boys from Eton College. It was not until 1865 that the first non-Etonian undergraduates arrived to study at King's, and the first fellow to have not attended Eton was elected in 1873.



The connection with Eton is now weak, but a scholarship to attend the college, exclusively available to students from Eton, is still awarded each year. The Gatehouse, built in the neo-Gothic style, as seen from King's Parade. The Gatehouse clock, as seen from the Great Court.

The very first buildings of the college, now part of the Old Schools, were begun in 1441, but by 1443 the decision to build to a much grander plan had been taken (see Fig. 3.2). That plan survives in the 1448 Founders Will describing in detail a magnificent court with a chapel on one side. But within a decade, civil war (the Wars of the Roses) meant that funds from the King began to dry up. By the time of his deposition in 1461, the chapel walls had been raised 60 ft high at the east end but only 8 ft at the west; a building line which can still be seen today as the boundary between the lighter stone below and the darker above. Work proceeded sporadically until a generation later in 1508 when the Founder's nephew King Henry VII was prevailed upon to finish the shell of the building. The interior had to wait a further generation until completion by 1544 with the aid of King Henry VIII.



Fig. 3.2: King's Panorama view

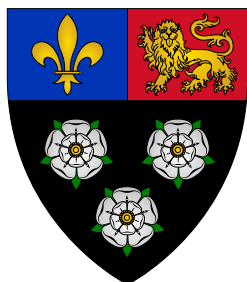


Fig. 3.3: King's college crest

It has been speculated that the choice of the college as a beneficiary by the two later Henrys was a political one, with Henry VII in particular concerned to legitimate a new, post-civil war Tudor regime by demonstrating patronage of what was by definition the King's College. Later building work is marked by an uninhibited branding with the Tudor rose and other symbols of the new establishment, quite against the precise instructions of the Founders Will. Henry VI is not completely forgotten at the College, however, the Saturday after the end of Michaelmas term each year is Founder's Day which begins with a Founder's Eucharist in the chapel, followed by a Founder's Breakfast with ale and culminating in a sumptuous dinner in his memory called "Founder's Feast" to which all members of College in their last year of studies are invited.

King's College Chapel is regarded as one of the greatest examples of late Gothic English architecture. It has the world's largest fan-vault, and the chapel's stained-glass windows and wooden chancel screen are considered some of the finest from their era. The building is seen as emblematic of Cambridge. The chapel's choir, composed of male students at King's and choristers from the nearby King's College School, is one of the most accomplished and renowned in the world. Every year on Christmas Eve the Festival of Nine Lessons and Carols (a service created by a Dean of King's especially for the college) is broadcast from the chapel to millions of listeners worldwide. King's was founded in 1441 by King Henry VI. His first design was modest, but by 1445 was intended to be a magnificent display of royal patronage. There were to be a Provost and seventy scholars, occupying a substantial site in central Cambridge whose drastic clearance involved the closure of several streets. The college was granted a remarkable series of feudal privileges, and all of this was supported by a substantial series of endowments from the King. King Henry VI had admired the achievements of William of Wykeham, who had founded the twin colleges of New College, Oxford (King's College's Sister College) and Winchester College in 1379. He subsequently modelled the establishment of King's and Eton College upon the successful formation of Wykeham's institutions. Indeed, the link that King's College and Eton College share is a direct copy of the link shared between New College and Winchester College. The four colleges continue to share formal ties to this

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Fig. 3.4: Hall

The very first buildings of the college, now part of the Old Schools, were begun in 1441, but by 1443 the decision to build to a much grander plan had been taken (see Fig. 3.2). That plan survives in the 1448 Founders Will describing in detail a magnificent court with a chapel on one side. But within a decade, civil war (the Wars of the Roses) meant that funds from the King began to dry up. By the time of his deposition in 1461, the chapel walls had been raised 60 ft high at the east end but only 8 ft at the west; a building line which can still be seen today as the boundary between the lighter stone below and the darker above. Work proceeded sporadically until a generation later in 1508 when the Founder's nephew King Henry VII was prevailed upon to finish the shell of the building. The interior had to wait a further generation until completion by 1544 with the aid of King Henry VIII.

Fig. 3.5: A picture of King's College Chapel.



Fig. 3.6: A picture of the same King's College Chapel reflection!

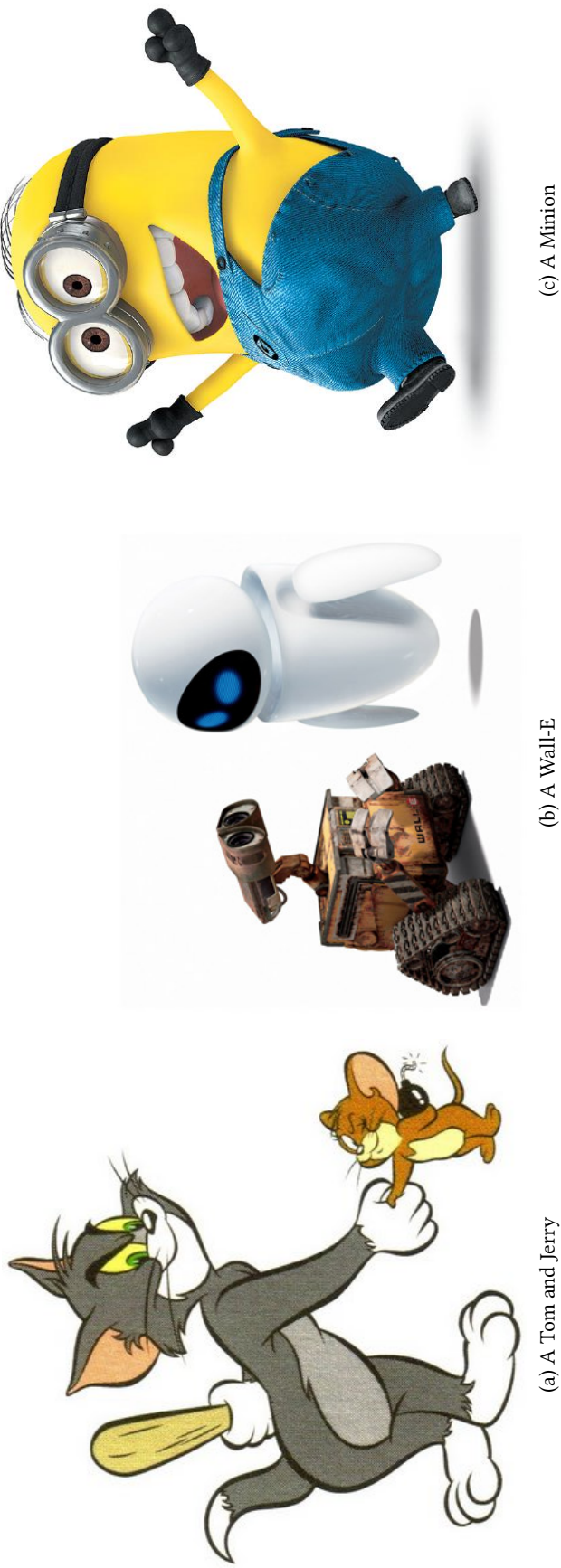


Fig. 3.7: Best Animations

Subplots

I can site Wall-E (see Fig. 3.7b) and Minions in despicable me (3.7c) or I can site the whole figure as (Fig. 3.7)

Chapter 4

Do I need a Chapter Title?

Here I can reference the section on Chapter 2 (see. 4.1). To add reference open the bibliography file in TexStudio. Then you can cite in whatever manner you wish Agnolin and Roux (2007) or like (Choi, 2005; Dasari and Soga, 2000; Frisch and Kolmogorov, 1995)

Piled Higher and Deeper - Life (or the lack thereof) in Academia (also known as PhD Comics),[1] is a newspaper and web comic strip written and drawn by Jorge Cham that follows the lives of several grad students. First published in the fall of 1997 when Cham was a grad student himself at Stanford University, the strip deals with issues of life in graduate school, including the difficulties of scientific research, the perils of procrastination, the complex student–supervisor relationship and the endless search for free food. Cham continued the strip as an Instructor in mechanical engineering at Caltech, and now draws and gives talks about the strip full time. Originally, the strip was drawn in crude black-and-white, eventually became grayscale, and finally became color in June 2004.

4.1 Section to be labelled

Second chapter goes on ...

I can also have some more references here ... can't I? Gallouat et al. (2010).

Here I have listed it as (see Mehta and Barker, 1994)

Piled Higher and Deeper - Life (or the lack thereof) in Academia (also known as PhD Comics),[1] is a newspaper and web comic strip written and drawn by Jorge Cham that follows the lives of several grad students. First published in the fall of 1997 when Cham was a grad student himself at Stanford University, the strip deals with issues of life in graduate school, including the difficulties of scientific research, the perils of procrastination, the complex student–supervisor relationship and the endless search for free food. Cham continued the strip as an Instructor in mechanical engineering at Caltech, and now draws and gives talks about the strip full time. Originally, the strip was drawn in crude black-and-white, eventually became grayscale, and finally became color in June 2004.

4.2 Without specifying width for last column:

Table 4.1: Table column width

Day	Min Temp	Max Temp	Summary
Monday	11C	22C	A clear day with lots of sunshine. However, the strong breeze will bring d
Tuesday	9C	19C	Cloudy with rain, across many northern regions. Clear spells across most
Wednesday	10C	21C	Rain will still linger for the morning. Conditions will improve by early af

Day	Min Temp	Max Temp	Summary
Monday	11C	22C	A clear day with lots of sun- shine. However, the strong breeze will bring down the tem- peratures.
Tuesday	9C	19C	Cloudy with rain, across many northern regions. Clear spells across most of Scotland and Northern Ireland, but rain reaching the far northwest.
Wednesday	10C	21C	Rain will still linger for the morning. Conditions will improve by early afternoon and continue throughout the evening.

4.3 Multiple columns

Table 4.2: Multiple Columns

Team	P	W	D	L	F	A	Pts
Manchester United	6	4	0	2	10	5	12
Celtic	6	3	0	3	8	9	9
Benfica	6	2	1	3	7	8	7
FC Copenhagen	6	2	1	2	5	8	7

Chapter 5

Tables

5.1 Tables with and without borders

Here is a table

Table 5.1: Table with borders

1	2	3
4	5	6
7	8	9

5.2 Tables with borders

Here is a table

Table 5.2: Table without borders

1	2	3
4	5	6
7	8	9

5.3 Tables with different borders

7C0	hexadecimal
3700	octal
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1984	decimal

5.4 Multi-column table

Team sheet	
GK	Paul Robinson
LB	Lucus Radebe
DC	Michael Duberry
DC	Dominic Matteo
RB	Didier Domi
MC	David Batty
MC	Eirik Bakke
MC	Jody Morris
FW	Jamie McMaster
ST	Alan Smith
ST	Mark Viduka

5.5 Multi-Row

Team sheet		
Goalkeeper	GK	Paul Robinson
Defenders	LB	Lucus Radebe
	DC	Michael Duberry
	DC	Dominic Matteo
	RB	Didier Domi
Midfielders	MC	David Batty
	MC	Eirik Bakke
	MC	Jody Morris
Forward	FW	Jamie McMaster
Strikers	ST	Alan Smith
	ST	Mark Viduka

Chapter 6

Alignment and Spacing

Left align

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For fun: Diamond, heart and nuts



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Multicolumn

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Here is some text to be distributed over several columns. In this example ragged right typesetting is used.

quotation

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To „how to quote in \LaTeX "

Poetry

Two roads diverged in a yellow wood, And sorry I could not travel both And be one traveler, long I stood And looked down one as far as I could To where it bent in the undergrowth;

Then took the other, as just as fair, And having perhaps the better claim, Because it was grassy and wanted wear; Though as for that the passing there Had worn them really about the same,

And both that morning equally lay In leaves no step had trodden black. Oh, I kept the first for another day! Yet knowing how way leads on to way, I doubted if I should ever come back.

I shall be telling this with a sigh Somewhere ages and ages hence: Two roads diverged in a wood, and Iâ€” I took the one less traveled by, And that has made all the difference.

verbatim

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style of the content. s0 You CAn Type hOWEVER you LikE. You can go beyond the margin so be aware of that! In verbatim you can type %@~>?*&^\$!

References

- Agnolin, I. and Roux, J.-N. (2007). Internal states of model isotropic granular packings. i. assembling process, geometry, and contact networks. *Phys. Rev. E*, 76(6):061302.
- Choi, J. (2005). *Transport-limited aggregation and dense granular flow*. PhD thesis, Massachusetts Institute of Technology.
- Dasari, G. and Soga, K. (2000). A guide book for soil models and soil-pipe analysis using ABAQUS. Report submitted to Tokyo Gas Co. Ltd., Tokyo, Japan, University of Cambridge.
- Frisch, U. and Kolmogorov, A. (1995). *Turbulence: the legacy of AN Kolmogorov*. Cambridge Univ Pr.
- Gallouat, T., Helluy, P., Hacrard, J.-M., and Nussbaum, J. (2010). Hyperbolic relaxation models for granular flows. *ESAIM: Mathematical Modelling and Numerical Analysis*, 44(02):371–400.
- Mehta, A. and Barker, G. (1994). The dynamics of sand. *Reports on Progress in Physics*, 57:383.