

How to Write an Excellent Excel@FIT Paper

Adam Herout*



Abstract

What is the problem? What is the topic?, the aim of this paper? Lorem ipsum dolor sit amet, consectetur adipiscing elit. Fusce ullamcorper suscipit euismod. Mauris sed lectus non massa molestie congue. In hac habitasse platea dictumst. How is the problem solved, the aim achieved (methodology)? Lorem ipsum dolor sit amet, consectetur adipiscing elit. Fusce ullamcorper suscipit euismod. Mauris sed lectus non massa molestie congue. In hac habitasse platea dictumst. Curabitur massa neque, commodo posuere fringilla ut, cursus at dui. Nulla quis purus a justo pellentesque. What are the specific results? How well is the problem solved? Lorem ipsum dolor sit amet, consectetur adipiscing elit. Fusce ullamcorper suscipit euismod. Mauris sed lectus non massa molestie congue. In hac habitasse platea dictumst. So what? How useful is this to Science and to the reader? Lorem ipsum dolor sit amet, consectetur adipiscing elit. Fusce ullamcorper suscipit euismod.

Keywords: Keyword1 — Keyword2 — Keyword3

Supplementary Material: [Demonstration Video](#) — [Downloadable Code](#)

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1. Introduction

[Motivation] What is the raison d'être of your project? Why should anyone care? No general meaningless claims. Make bulletproof arguments for the importance of your work. Lorem ipsum dolor sit amet, consectetur adipiscing elit. Integer sit amet neque vel mi sodales interdum nec a mi. Aliquam eget turpis venenatis, tincidunt purus eget, euismod neque. Nulla et porta tortor, id lobortis turpis. Sed scelerisque sem eget ante interdum, vel volutpat arcu volutpat.

[Problem definition] What exactly are you solving? What is the core and what is a bonus? What parameters should a proper solution of the problem have? Define the problem precisely and state how its solution should be evaluated. Lorem ipsum dolor sit amet, consectetur adipiscing elit. Pellentesque non arcu quis nunc efficitur vestibulum. Integer gravida

neque suscipit diam porta aliquet. Maecenas porttitor libero ut turpis porttitor, auctor porta ligula rhoncus. Etiam a turpis blandit, eleifend dolor eget, egestas ligula. Nullam sollicitudin pulvinar mi sit amet interdum. Etiam in ultrices ante. Suspendisse potenti. Duis vel nisi eget tellus volutpat tempor. Etiam laoreet magna elit, et sollicitudin lectus tempor sit. Maecenas porttitor libero ut turpis porttitor, auctor porta ligula rhoncus. Etiam a turpis blandit, eleifend dolor eget, egestas ligula.

[Existing solutions] Discuss existing solutions, be fair in identifying their strengths and weaknesses. Cite important works from the field of your topic. Try to define well what is the *state of the art*. You can include a Section 2 titled "Background" or "Previous Works" and have the details there and make this paragraph short. Or, you can enlarge this paragraph to a

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35 whole page. In many scientific papers, *this* is the most
 36 valuable part if it is written properly. Lorem ipsum
 37 dolor sit amet, consectetur adipiscing elit. Praesent
 38 congue enim eu eros dictum sagittis. Aliquam ligula
 39 arcu, gravida at augue et, aliquet condimentum nulla.
 40 Morbi a lectus arcu. Nam ac commodo nisi, a accum-
 41 san nunc. Nam sed ante vel nulla elementum lobortis.
 42 Aliquam sed laoreet risus. Etiam ipsum odio, gravida
 43 eget sapien dictum, eleifend aliquet ex. Duis dapibus
 44 vitae enim vitae bibendum. Phasellus eget pulvinar
 45 massa. Mauris ornare urna. Maecenas porttitor libero
 46 ut turpis porttitor, auctor porta ligula rhoncus. Etiam a
 47 turpis blandit, eleifend dolor eget, egestas ligula. Nul-
 48 lam sollicitudin pulvinar mi sit amet interdum. Etiam
 49 in ultrices ante. Suspendisse potenti. Duis vel nisi eget
 50 tellus volutpat tempor. Suspendisse potenti. Duis vel
 51 nisi eget tellus volutpat tempor.

52 **[Our solution]** Make a quick outline of your ap-
 53 proach – pitch your solution. The solution will be
 54 described in detail later, but give the reader a very
 55 quick overview now. Lorem ipsum dolor sit amet, con-
 56 sectetur adipiscing elit. Morbi laoreet risus a egestas
 57 imperdiet. Ut egestas nibh non fermentum vestibulum.
 58 Nullam quis eleifend ex, sed maximus nisl. Mauris
 59 maximus non dolor id tristique. Nunc pulvinar congue
 60 gravida. Nullam lobortis viverra leo sed commodo.
 61 Nulla in elit congue, ullamcorper metus non, eleifend
 62 risus. Vivamus porttitor, ex nec porttitor pretium,
 63 libero turpis ultrices dui, eu efficitur ante ipsum vel
 64 justo. Vivamus nec nulla nisi. Aenean quis mauris
 65 vitae metus gravida congue.

66 **[Contributions]** Sell your solution. Pinpoint your
 67 achievements. Be fair and objective. Lorem ipsum
 68 dolor sit amet, consectetur adipiscing elit. Integer sit
 69 amet neque vel mi sodales interdum nec a mi. Aliquam
 70 eget turpis venenatis, tincidunt purus eget, euismod
 71 neque. Nulla et porta tortor, id lobortis turpis. Sed
 72 scelerisque sem eget ante interdum, vel volutpat arcu
 73 volutpat. Aliquam cursus, dolor a luctus.

74 2. How To Use This Template

75 Here will go several sections describing **your work**.
 76 From theoretical background (Section 2), through your
 77 own methodology (Section 3), experiments and imple-
 78 mentation (Section 4 and possibly 5), to conclusions
 79 (Section 6). Instead of such technical content, here
 80 in this template we give a few hints how to write the
 81 paper.

82 Here is a list of actions to do first when you want
 83 to write an Excel@FIT paper:

- 84 1. Download all the template files (Sec. 2.1) into a
 85 directory. Maybe setup a GIT sync for backup,



Figure 1. Good writing is bad writing that was rewritten several times. Don't worry, start somewhere.

- sharing, and for use from multiple computers. 86
2. Rename *2016-ExcelFIT-ShortName.tex* – replace 87
ShortName with something that identifies your 88
work and is short enough. For example: *Vehicle-* 89
Boxes, *VanishingPoints*, *FastShadows*, *NewPro-* 90
beTesting, *CheapDynamicDNS*, ... This ensures 91
that the filename already gives a hint what is in 92
there (*mypaper.pdf* is really stupid). 93
3. Decide the language of your paper. English is 94
recommended, as it is the language of science 95
and technology. However, if you want to write 96
in Czech or Slovak, you may. Use the correct 97
option to the `\documentclass` command – the 98
very first line of the template. The option may 99
be either `[czech]` or `[slovak]`. 100
4. Insert meta information: **your name, e-mail,** 101
paper title. Make sure the year in the top right 102
corner of the document is correct. Do not hes- 103
itate to use `ěščřžýáíé` in your name – the L^AT_EX 104
template is configured to eat UTF8 Unicode. 105
5. Insert teaser images (“image abstract”). Use 106
as many `\TeaserImage` commands as suitable 107
– three or four will usually be fine for a one- 108
line teaser. If you absolutely don't have any 109
image showing your work (what kind of work 110
could that be, anyway?!), remove the `\Teaser` 111
command. 112
6. Insert references to supplementary material. That 113
will typically be clickable links to a youtube / 114
vimeo video and to downloadable code, hyper- 115
link to an online demo, or a github repo. If you 116
have anything else relevant, put it in. If there is 117
no supplementary material (really?!), remove or 118
comment out the `\Supplementary` command. 119
7. Keep calm and start writing (Figure 1). Some 120

121 suggestions how to do this are in Section 3.
 122 8. When your paper is accepted to Excel@FIT, un-
 123 comment `\ExcelFinalCopy` at the beginning of
 124 this file. The line numbers will disappear from
 125 the sides of the text and your paper is ready for
 126 final publication.

127 Jean-Luc Lebrun [?] offers excellent recommenda-
 128 tions for the canonical sections of scientific/technical
 129 papers. That is why Abstract, Introduction, and Con-
 130 clusions in this template are already structured (re-
 131 move the **[Bold labels]** in the Introduction and Con-
 132 clusions, they are there just for your information and
 133 should not remain in the paper). This structure is no
 134 more than a recommendation, but divert from it only
 135 in cases when you exactly know what you are doing.
 136 The “phony” texts (typeset in gray color) roughly in-
 137 dicate the lengths of individual parts of these sections.
 138 Replace them with reasonable amounts of text.

139 2.1 What Files are Here and Why

140 The template package for Excel@FIT papers contains
 141 these files:

142 **2016-ExcelFIT-ShortName.tex** This is the template
 143 for the main L^AT_EX file – this is your paper. Do
 144 yourself a favor and replace *ShortName* in the
 145 filename with something meaningful.

146 **2016-ExcelFIT-ShortName-bib.bib** You can delete
 147 the contents of this file completely and start
 148 adding BibTeX references. It is much easier
 149 to use a small editing tool (Section 4, JabRef)
 150 than to format *.bib* file manually. Rename the
 151 file so that *ShortName* is consistent with the pre-
 152 vious file (and update the filename in the *.tex*
 153 file).

154 **ExcelAtFIT.cls** L^AT_EX class file based on the *Stylish*
 155 *Article*¹ document class. Do not modify this file.

156 **ExcelAtFIT-logo.pdf** This is the logo on the title page.

157 **VUT-FIT-logo.pdf** Another logo on the title page.

158 **images/placeholder.pdf** Placeholder image; include
 159 it, scale it as needed, then replace it with real
 160 content.



161 **images/keep-calm.png** You don’t need this file; it
 162 is only used in this template to show how to
 163 include a *.png* file (Figure 1).
 164

¹<http://www.latextemplates.com/template/stylish-article>

3. How To Write the Paper — A Few Hints 165

A reasonable way to start writing is sketching the **ab-**
stract [?]. Writing the abstract helps focus on what
 is important in the paper, what is the contribution, the
 meaning for the community. This exercise might take
 some 20 minutes and it pays back by clearing the key
 points of the text. In 99 % cases it is very reasonable
 to stick to the abstract structure [?] which is provided
 in this template.

Once you have the abstract, it should be very clear
 what is the message of the paper, what is the newly
 introduced knowledge, what are the proofs of its contri-
 bution, etc. This is the right time to start constructing
 the *skeleton* of the paper: it’s **comics edition** [?]. This
 thing is composed of mainly four items:

1. **Sections and subsections.** 180
2. **Figures and tables.** At this phase, knowing
 that “once there will be a figure about this and
 that” is just fine. That is why we have the *place-*
holder.pdf image – see Figure 2. If this totally
 generic image can be replaced by some tempo-
 rary image which still needs more work, but
 which is closer to the target version, go ahead.
 A hand-drawing photographed by a cellphone is
 perfect at this stage. 189
3. **Todo’s.** In the early comics version, every sec-
 tion is filled by one or more `\todo` commands
 and nothing else. A todo in the text might look
 like: **[[you should do something]]**. Unlike some
 elaborated todo packages, this simple solution
 (defined in the template) does not break the page
 formatting and it is perfectly sufficient. 196
4. **Phony placeholder texts.** These help you esti-
 mate the proportions of individual sections and
 subsections and to better aim at the correct paper
 length. Use `\blind{3}` to get three paragraphs
 of beautiful grey phony text. 201

One hour is usually enough for creating a nice comics
 edition of the paper. No reason to wait, make a copy
 of the template and start butchering it.

Having the comics edition usually lubricates the
 whole writing process. Now, the paper contains 20 or
 so todo’s – why not take the easiest one of them and
 replace it with a few lines of text within 15 minutes or
 even less. Writing is no more a scary complex work.

3.1 Images and Tables 210

Visuals (figures, tables, good equations, section head-
 ings) make the skeleton of a properly written paper.
 A time-stressed reader should be able to get the idea
 from only browsing them. Therefore:

215	1. Make them perfect. Cheap and ugly images –	264												
216	cheap and ugly paper. Imperfect or shorter text –	265												
217	who cares?	266												
218	2. Make them self-contained. Be not afraid to	267												
219	have a ten-lines-long caption under an image.													
220	The image plus its caption must make perfect													
221	sense by themselves, without reading the text.													
222	3. Make them many. EVERY technical idea is													
223	better explained by an image. Two images per													
224	page are a moderate start.													
225	L^AT_EX lets you easily insert both vector and raster													
226	graphics. It is reasonable to use three formats:													
227	.pdf Perfect for vector graphics. All graphs must be													
228	in vector and therefore in .pdf. Gnuplot, pyplot,													
229	Matlab – they all produce vector graphs in .pdf													
230	easily. Diagrams, system structures, sketches													
231	– all vector graphics. It’s 2016, not 1980 any-													
232	more...													
233	.jpg Suitable for photos. Never for plots or screen-													
234	shots.													
235	.png Good for precise raster graphics. Screenshots,													
236	raster plots, raster outputs of programs. Not for													
237	diagrams and plots – unless it is a one-in-ten-													
238	years exception.													
239	Caption of a table goes before the table (e.g. Table 1),													
240	just the opposite way than with figures. There is no													
241	logic behind, that’s just how it is.													
242	3.2 Sections and Subsections													
243	It is usually wrong to have subsections in the Introduc-													
244	tion; it is always wrong to have them in Conclusions.													
245	In this kind of paper, it is very likely to be wrong to													
246	have any subsubsections.													
247	Section headings are the skeleton of the paper –													
248	make them accurate and descriptive. One-word sec-													
249	tion titles (apart from Introduction and Conclusions)													
250	are typically wrong, because they are not descriptive.													
251	“Proposed Method for Running X by Using Y” is bet-													
252	ter than “The Method”. “Implemented Application													
253	for PQR Communication” is better than “Application”.													
254	The outline of all section titles should contain all the													
255	keywords relevant for the work. Just by seeing them,													
256	the reader should be able to tell precisely the topic													
257	of the paper. If not, the section headers are wrong													
258	(usually too short and generic).													
259	3.3 Keywords													
260	Keywords are specified at the top of the document.													
261	1. When making the list of keywords, ask yourself													
262	this: “What should one write to google, so that													
263	the right answer would be my paper?”													
	2. Very generic terms (“IT”, “Graphics”, “Hard-	264												
	ware”) are useless. Narrow terms are fine (“Ma-	265												
	trix Code Recognition”, “Appearance-Based Ve-	266												
	hicle Segmentation”, ...)	267												
	4. Some Useful Tools	268												
	This list is not a list and it is by no means complete. If	269												
	you prefer other tools – cool, stick with them. If you	270												
	are just beginning, consider these.	271												
	MikTeX Problem-free L ^A T _E X for Windows; a distribu-	272												
	tion with perfect automation of package down-	273												
	load. Single setup, no more worries.	274												
	TeXstudio Portable and opensource GUI for L ^A T _E X	275												
	writing. Ctrl+click jumps from pdf to latex and	276												
	back. Integrated spellchecker, syntax highlight-	277												
	ing, multifile projects, etc. First, install Mik-	278												
	TeX, then TeXstudio. Ten minutes and you are	279												
	a L ^A T _E X master.	280												
	JabRef Nice and simple Java program for managing	281												
	.bib files with references. Not much to learn –	282												
	one window, a straightforward form for editing	283												
	the entries.	284												
	InkScape Opensource and portable editor of vector	285												
	files (SVG and – conveniently – PDF). The	286												
	proper tool for making great drawings for pa-	287												
	pers – not the easiest to learn, though.	288												
	GIT Great for team collaboration on L ^A T _E X projects,	289												
	but also helpful to a single author – for version-	290												
	ing, backup, multi-computer, ...	291												
	Overleaf Online L ^A T _E X editing – some love it, to oth-	292												
	ers it might seem a little too slow, though...	293												
	5. Frequently Used L^AT_EX Fragments	294												
	Here goes an example of a table:													
	Table 1. Table of Grades													
	<table><tr><th colspan="3">Name</th></tr><tr><th>First name</th><th>Last Name</th><th>Grade</th></tr><tr><td>John</td><td>Doe</td><td>7.5</td></tr><tr><td>Richard</td><td>Miles</td><td>2</td></tr></table>	Name			First name	Last Name	Grade	John	Doe	7.5	Richard	Miles	2	
Name														
First name	Last Name	Grade												
John	Doe	7.5												
Richard	Miles	2												
	Figure 2 shows a wide figure, Figure 1 is a single-	295												
	column figure with width specified relatively to the	296												
	column. Some mathematics $\cos \pi = -1$ and α in the	297												
	text ² .	298												
	Now, this is an equation:	299												
	$\cos^3 \theta = \frac{1}{4} \cos \theta + \frac{3}{4} \cos 3\theta \quad (1)$	300												
	² And some mathematics $\cos \pi = -1$ and α in a footnote.													



Figure 2. Wide Picture. The whole figure can be composed of several smaller images. If you want to address individual images in the caption or from the text, use the *subcaption* package.

and here is a bunch of equations aligned horizontally:

$$3x = 6y + 12 \quad (2)$$

$$x = 2y + 4 \quad (3)$$

Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like “Huardest gefburn”? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language.

amet, consectetur adipiscing elit. Praesent posuere mattis ante at imperdiet. Cras id tincidunt purus. Aliquam erat volutpat. Morbi non gravida nisi, non iaculis tortor. Quisque at fringilla neque.

[Future Work] How can other researchers / developers make use of the results of this work? Do you have further plans with this work? Or anybody else? Lorem ipsum dolor sit amet, consectetur adipiscing elit. Suspendisse sollicitudin posuere massa, non convallis purus ultricies sit amet. Duis at nisl tincidunt, maximus risus a, aliquet massa. Vestibulum libero odio, condimentum ut ex non, eleifend.

Acknowledgements

I would like to thank my supervisor X. Y. for his help.

6. Conclusions

[Paper Summary] What was the paper about, then? What the reader needs to remember about it? Lorem ipsum dolor sit amet, consectetur adipiscing elit. Proin vitae aliquet metus. Sed pharetra vehicula sem ut varius. Aliquam molestie nulla et mauris suscipit, ut commodo nunc mollis.

[Highlights of Results] Exact numbers. Remind the reader that the paper matters. Lorem ipsum dolor sit amet, consectetur adipiscing elit. Sed tempus fermentum ipsum at venenatis. Curabitur ultricies, mauris eu ullamcorper mattis, ligula purus dapibus mi, vel dapibus odio nulla et ex. Sed viverra cursus mattis. Suspendisse ornare semper condimentum. Interdum et malesuada fames ac ante ipsum.

[Paper Contributions] What is the original contribution of this work? Two or three thoughts that one should definitely take home. Lorem ipsum dolor sit