

Machine Learning Approach to Supporting Decision-Making Processes in Telecom Industry

Carlos R. Norris*, James T. Kirk[†], Jannah S. Mohammad[‡], Koenraad Baelmans[†] and Svetlana Marazova[§]

*School of Electrical and Computer Engineering,
Georgia Institute of Technology, Atlanta, GA, USA
Email: chuck.norris@po.gatech.edu

[†]Massachusetts Institute of Technology,
Computer Science and Artificial Intelligence Laboratory, Cambridge, MA, USA
Email: jtkirk@mit.edu, k.baelmans@mit.edu

[‡]King Abdullah University of Science and Technology,
Computational Bioscience Research Center, Thuwal, Saudi Arabia Email: jsm@kaust.edu.sa

[§]Siberian Federal University,
Institute of Engineering Physics and Radio Electronics, Krasnoyarsk, Russia
Email: sveta@icm.krasn.ru

Abstract—The abstract goes here.

I. INTRODUCTION

This demo file is intended to serve as a “starter file” for IEEE conference papers produced under L^AT_EX using IEEEtran.cls version 1.7 and later. We wish you the best of success.

kp & mb

December 20, 2012

II. SOME INSTRUCTIONS

Please take note of the following items when proofreading spelling and grammar:

A. Abbreviations and Acronyms

Define abbreviations and acronyms the first time they are used in the text, even after they have been defined in the abstract. Abbreviations such as IEEE, SI, MKS, CGS, sc, dc, and rms do not have to be defined. Do not use abbreviations in the title or heads unless they are unavoidable.

B. Units

Use either SI (MKS) or CGS as primary units. (SI units are encouraged.) English units may be used as secondary units (in parentheses). An exception would be the use of English units as identifiers in trade, such as “3.5-inch disk drive.”

Avoid combining SI and CGS units, such as current in amperes and magnetic field in oersteds. This often leads to confusion because equations do not balance dimensionally. If you must use mixed units, clearly state the units for each quantity that you use in an equation.

Do not mix complete spellings and abbreviations of units: “Wb/m²” or “webers per square meter,” not “webers/m².” Spell units when they appear in text: “...a few henries,” not “...a few H.”

Identify applicable sponsor/s here. If no sponsors, delete this text box (sponsors).

Use a zero before decimal points: “0.25,” not “.25.” Use “cm3,” not “cc.”

C. Some Common Mistakes

- The word “data” is plural, not singular.
- The subscript for the permeability of vacuum μ_0 , and other common scientific constants, is zero with subscript formatting, not a lowercase letter “o.”
- In American English, commas, semi-/colons, periods, question and exclamation marks are located within quotation marks only when a complete thought or name is cited, such as a title or full quotation. When quotation marks are used, instead of a bold or italic typeface, to highlight a word or phrase, punctuation should appear outside of the quotation marks. A parenthetical phrase or statement at the end of a sentence is punctuated outside of the closing parenthesis (like this). (A parenthetical sentence is punctuated within the parentheses.)
- A graph within a graph is an “inset,” not an “insert.” The word alternatively is preferred to the word “alternately” (unless you really mean something that alternates).
- Do not use the word “essentially” to mean “approximately” or “effectively.”
- In your paper title, if the words “that uses” can accurately replace the word using, capitalize the “u”; if not, keep using lower-cased.
- Be aware of the different meanings of the homophones “affect” and “effect,” “complement” and “compliment,” “discreet” and “discrete,” “principal” and “principle.”
- Do not confuse “imply” and “infer.”

- The prefix "non" is not a word; it should be joined to the word it modifies, usually without a hyphen.
- There is no period after the "et" in the Latin abbreviation "et al."
- The abbreviation "i.e." means "that is," and the abbreviation "e.g." means "for example."

An excellent style manual for science writers is [7].

III. FIGURES

The following figure is in the EPS format. Nowadays, there are many online tools to create an EPS from a JPEG, GIF, PNG and other formats for storing images.

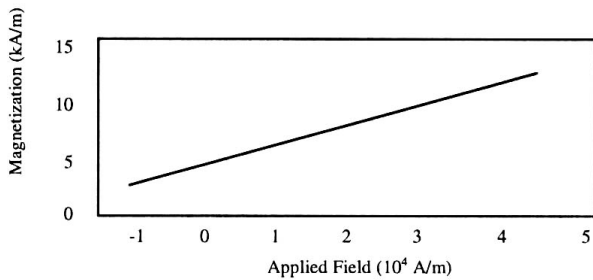


Fig. 1. Magnetization as a function of applied field. Note how the image is centered in the column, while the caption is not.

IV. REFERENCES: THE BIBLIOGRAPHY

Please define your bibliography as follows:
`\bibliographystyle{mybstfile}`
`\bibliography{IEEEabrv,mybibfile}`

The IEEE titles in the mybibfile.bib database entries use the strings defined in IEEEabrv.bib, e.g. {journal = IEEE_J_IT} to yield "IEEE Trans. Inf. Theory". IEEE uses abbreviated journal titles in their bibliographies.

Thus, the code:

```
@article{IEEEexample:TBParticle,
author = "N. Kahale and R. Urbanke",
title = "On the Minimum Distance of Parallel and Serially
Concatenated Codes",
journal = IEEE_J_IT,
year = "submitted for publication"
produces the reference [1].
```

A. Some Additional Notes about Capital Letters in Publication Titles

Please note that additional curly brackets within the publication *title* fields in your bibliography file prevent automated capitalization and thus the exact content of the *title* field is displayed[2]:

```
@article{IEEEexample:articlelargepages,
author = "A. Castaldini and A. Cavallini and B. Fraboni
and P. Fernandez and J. Piqueras",
title = "Midgap Traps Related to Compensation Processes in
{CdTe} Alloys",
```

```
journal = "Phys. Rev. B.",
volume = "56",
number = "23",
year = "1997",
pages = "14897-14900"
}
```

Without the additional curly brackets, the IEEE bibliography style IEEEtran.bst shows all publication titles with just the first title word capitalized[3]:

```
@inproceedings{IEEEexample:conf_typical,
author = "R. K. Gupta and S. D. Senturia",
title = "Pull-in Time Dynamics as a Measure of Absolute
Pressure",
booktitle = "Proc. IEEE International Workshop on
Microelectromechanical Systems (MEMS'97)",
address = "Nagoya, Japan",
month = jan,
year = "1997",
pages = "290-294"
}
```

V. SECTIONS, SUBSECTIONS AND SUBSUBSECTIONS

A section has just started. A subsection follows next.

A. Sections, Subsections and Subsubsections

A subsection has just started. A subsubsection follows next.

1) *A Subsubsection:* This part of the text is a subsection. Even subsections can be divided into subsubsections.

2) *Another Subsubsection:* This part of the text is another subsection.

VI. CONCLUSION

The conclusion goes here.

ACKNOWLEDGMENT

The authors would like to thank...

REFERENCES

- [1] N. Kahale and R. Urbanke, "On the minimum distance of parallel and serially concatenated codes," *IEEE Trans. Inf. Theory*, submitted for publication.
- [2] A. Castaldini, A. Cavallini, B. Fraboni, P. Fernandez, and J. Piqueras, "Midgap traps related to compensation processes in CdTe alloys," *Phys. Rev. B.*, vol. 56, no. 23, pp. 14 897–14 900, 1997.
- [3] R. K. Gupta and S. D. Senturia, "Pull-in time dynamics as a measure of absolute pressure," in *Proc. IEEE International Workshop on Microelectromechanical Systems (MEMS'97)*, Nagoya, Japan, Jan. 1997, pp. 290–294.