

# *Use Cases in Big Data Software and Analytics*

Vol. 1, Fall 2017

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*Bloomington, Indiana*

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Editor:  
Gregor von Laszewski  
Department of Intelligent Systems  
Engineering  
Indiana University  
laszewski@gmail.com

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5	hid316	Status: 10%	
	Big data on IoT Smart Refrigerators		
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6	hid329	Status: 0%	
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20	TBD		17
7	hid101	Status: not yet started	
	Benchmarking a BigData Docker deployment		
	Huiyi Chen . . . . .		17
8	hid102	Status: unkown	
	Benchmarking a BigData Docker deployment		
	Gregor von Laszewski . . . . .		17
9	hid104	Status: 5%	
	Big Data = Big Bias? Ethical Challenges of Big Data		
	Jones, Gabriel . . . . .		17
10	hid105	Status: unkown	
	Benchmarking a BigData Docker deployment		
	Gregor von Laszewski . . . . .		17
11	hid106	Status: None	
	Benchmarking a BigData Docker deployment		
	Qiaoyi Liu . . . . .		17
12	hid107	Status: unkown	
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	Gregor von Laszewski . . . . .		17
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	Big Data and Business Intelligence		
	Shiqi Shen . . . . .		17
14	hid111	Status: unkown	
	Benchmarking a BigData Docker deployment		
	Gregor von Laszewski . . . . .		24
15	hid201	Status: not started	
	None		
	Arnav, Arnav . . . . .		24

16	hid202	Status: 0%	
	This is my paper about the other abc		
	Himani Bhatt . . . . .		31
17	hid204	Status: Not started yet	
	Benchmarking a BigData Docker deployment		
	Gregor von Laszewski . . . . .		31
18	hid205	Status: 0%	
	This is my paper about the other abc		
	Chaudhary Mrunal L . . . . .		31
19	hid208	Status: unkown	
	TBD		
	Jyothi Pranavi Devineni . . . . .		31
20	hid211	Status: unkown	
	Benchmarking a BigData Docker deployment		
	Gregor von Laszewski . . . . .		31
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	Not yet decided		
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22	hid213	Status: unkown	
	TBD		
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	This is my paper about the other abc		
	Gregor von Laszewski . . . . .		31
24	hid215	Status: yet to start	
	to be decided		
	Mallala, Bharat . . . . .		31
25	hid216	Status: not started	
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	Millard, Mathew . . . . .		31
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	This is my paper about the other abc		
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	Benchmarking a BigData Docker deployment		
	Gregor von Laszewski . . . . .		31
28	hid224	Status: not started	
	Big Data Applications in the Energy and Utilities Sector		
	Rawat, Neha . . . . .		31
29	hid225	Status: not started	
	...		
	Schwartzner, Matthew . . . . .		31
30	hid228	Status: 0%	
	TBD		
	Swargam, Prashanth . . . . .		31

31	hid229	Status: not yet started	
	TBD		
	ZhiCheng Zhu . . . . .		31
32	hid230	Status: unknown	
	Big data with natural language processing		
	YuanMing Huang . . . . .		31
33	hid232	Status: 0%	
	This is my paper about the other abc		
	Gregor von Laszewski . . . . .		31
34	hid234	Status: 0%	
	Big Data and Edge Computing in Health Informatics for People with Disabilities.		
	Weixuan Wang . . . . .		31
35	hid235	Status: 0%	
	Big Data		
	Yujie Wu . . . . .		31
36	hid236	Status: not started	
	Benchmarking a BigData Docker deployment		
	Weipeng Yang . . . . .		31
37	hid237	Status: 0%	
	Benchmarking a BigData Docker deployment		
	Gregor von Laszewski . . . . .		31
38	hid301	Status: unknown	
	Benchmarking a BigData Docker deployment		
	Gregor von Laszewski . . . . .		31
39	hid302	Status: not started	
	Hadoop and MongoDB in support of Big Data Applications and Analytics		
	Sushant Athaley . . . . .		31
40	hid304	Status: 0%	
	Big Data and Analytics in Deep Space Telemetry and Navigation		
	Ricky Carmickle . . . . .		31
41	hid305	Status: 0%	
	Big Data applied to zoning and city planning.		
	Andres Castro Benavides . . . . .		31
42	hid306	Status: 0% complete	
	To be decided		
	Murali Cheruvu . . . . .		31
43	hid308	Status: 0%	
	Parallel Computing and Big Data		
	Pravin Deshmukh . . . . .		31
44	hid311	Status: 0%	
	Benchmarking a BigData Docker deployment		
	Gregor von Laszewski . . . . .		31
45	hid312	Status: not yet started	
	To be decided		
	Neil Eliason . . . . .		31

46	hid313	Status: 5%	
	Big Data Applications in Laboratories		
	Tiffany Fabianac . . . . .		31
47	hid314	Status: 0%	
	Benchmarking a BigData Docker deployment		
	Gregor von Laszewski . . . . .		31
48	hid315	Status: 0%	
	Benchmarking a BigData Docker deployment		
	Gregor von Laszewski . . . . .		31
49	hid318	Status: 0%	
	Benchmarking a BigData Docker deployment		
	Gregor von Laszewski . . . . .		31
50	hid319	Status: Yet to start	
	Big data Analytics and effective decision making in Telecommunication industry		
	Mani Kumar Kagita . . . . .		31
51	hid320	Status: 0%	
	This is my paper about Big Data Analytics and Applications in Sustainable Fish Breeding		
	Elena Kirzhner . . . . .		31
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	Gregor von Laszewski . . . . .		31
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	Uma M Kugan . . . . .		31
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	TBD		
	Ashok Kuppuraj . . . . .		31
55	hid325	Status: 0%	
	This is my paper about data sharing		
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56	hid326	Status: unkown	
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	Mohan Mahendrakar . . . . .		31
57	hid328	Status: not yet started	
	Big data analytics in data center network monitoring		
	Dhanya Mathew . . . . .		31
58	hid331	Status: 0%	
	Big Data Applications in Using Neural Network for Medical Image Analysis		
	Tyler Peterson . . . . .		31
59	hid332	Status: In process	
	Big Data Analytics in Developing Countries		
	Judy Phillips . . . . .		31
60	hid333	Status: 0%	
	Nartural language processing (NLP) for speech analysis and voice recognition		
	Anil Ravi, Ashok Reddy Singam . . . . .		31

61	hid334	Status: 0%	
	Advancements in Drone Technology for the US Military		
	Peter Russell . . . . .		31
62	hid335	Status: 10%	
	Big Health Data from Wearable Electronic Sensors (WES) and the Treatment of Opioid Addiction		
	Sean M. Shiverick . . . . .		31
63	hid337	Status: 0%	
	Natural Language Processing (NLP) to analyze human speech data		
	Ashok Reddy Singam, Anil Ravi . . . . .		34
64	hid338	Status: 0%	
	Benchmarking a BigData Docker deployment		
	Gregor von Laszewski . . . . .		37
65	hid339	Status: 0%	
	Benchmarking a BigData Docker deployment		
	Hady Sylla . . . . .		37
66	hid340	Status: 0%	
	Big data on the blockchain? Distributed networks and large-scale analytics		
	Timothy A. Thompson . . . . .		37
67	hid341	Status: 0%	
	This is my paper about the other abc		
	Tibenkana, Jacob . . . . .		37
68	hid342	Status: 0%	
	Still under consideration		
	Udoyen, Nsikan . . . . .		37
69	hid343	Status: 0%	
	None		
	Borga Edionse Usifo . . . . .		37
70	hid345	Status: unkown	
	Big Data Analytics and influence on althetics.		
	Ross Wood . . . . .		37
71	hid346	Status: unkown	
	This is my paper about the other abc		
	Gregor von Laszewski . . . . .		37
72	hid348	Status: 20%	
	Something about NOSQL people DID NOT DO IN i524 Figure out a topic which is not covered need approval		
	Budhaditya Roy . . . . .		37





# Chapter 1

## Preface

### 1.1 List of Papers

Name	HID	Title
hid101	Huiyi Chen	Benchmarking a BigData Docker deployment
hid102	Dianprakasa, Arif	Benchmarking a BigData Docker deployment
hid104	Jones, Gabriel	Big Data = Big Bias? Ethical Challenges of Big Data
hid105	Lipe-Melton, Josh	Benchmarking a BigData Docker deployment
hid106	Qiaoyi Liu	Benchmarking a BigData Docker deployment
hid107	Ni,Juan	Benchmarking a BigData Docker deployment
hid109	Shiqi Shen	Big Data and Business Intelligence
hid111	Lewis, Derek	Benchmarking a BigData Docker deployment
hid201	Arnav, Arnav	None
hid202	Himani Bhatt	This is my paper about the other abc
hid203	error: yaml	This is my paper about the other abc
hid204	Chaturvedi, Dhawal	Benchmarking a BigData Docker deployment
hid205	Chaudhary, Mrunal L	This is my paper about the other abc
hid208	Devineni, Jyothi Pranavi	TBD
hid209	Han, Wenxuan	Clustering Algorithms in Big Data Analysis
hid210	error: yaml	Clustering Algorithms in Big Data Analysis
hid211	Ajinkya Khamkar	Benchmarking a BigData Docker deployment
hid212	Kumar, Saurabh	Not yet decided
hid213	Liu, Yuchen	TBD
hid214	Lu, Junjie	This is my paper about the other abc
hid215	Mallala, Bharat	to be decided
hid216	Millard, Mathew	n/a
hid218	Niu, Geng	This is my paper about the other abc
hid219	Syam Sundar Herle Parampali Sreenath	Benchmarking a BigData Docker deployment
hid224	Rawat, Neha	Big Data Applications in the Energy and Utilities Sector
hid225	Schwartzner, Matthew	...
hid228	Swargam, Prashanth	TBD
hid229	ZhiCheng Zhu	TBD
hid230	YuanMing Huang	Big data with natural language processing
hid231	Vegi, Karthik	Using Big Data to battle Air Pollution
hid232	Rahul Velayutham	This is my paper about the other abc
hid233	Wang, Jiaan	Big Data Applications in Virtual Assistants

hid234	Weixuan Wang	Big Data and Edge Computing in Health Informatics for People with Disabilities.
hid235	Wu, Yujie	Big Data
hid236	Yang Weipeng	Benchmarking a BigData Docker deployment
hid237	Ahmed, Tousif	Benchmarking a BigData Docker deployment
hid301	Arora, Gagan	Benchmarking a BigData Docker deployment
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hid304	Ricky Carmickle	Big Data and Analytics in Deep Space Telemetry and Navigation
hid305	Andres Castro Benavides	Big Data applied to zoning and city planning.
hid306	Cheruvu, Murali	To be decided
hid308	Pravin Deshmukh	Parallel Computing and Big Data
hid309	error: yaml	Parallel Computing and Big Data
hid310	error: yaml	Parallel Computing and Big Data
hid311	Durbin, Matthew	Benchmarking a BigData Docker deployment
hid312	Neil Eliason	To be decided
hid313	Tiffany Fabianac	Big Data Applications in Laboratories
hid314	Fadnavis, Sarang	Benchmarking a BigData Docker deployment
hid315	Garner, Jeffry	Benchmarking a BigData Docker deployment
hid316	Robert Gasiewicz	Big data on IoT Smart Refrigerators
hid318	Irey, Ryan	Benchmarking a BigData Docker deployment
hid319	Mani Kumar Kagita	Big data Analytics and effective decision making in Telecommunication industry
hid320	Elena Kirzhner	This is my paper about Big Data Analytics and Applications in Sustainable Fish Breeding
hid321	Knapp, William	Benchmarking a BigData Docker deployment
hid323	Uma M Kugan	None
hid324	Ashok Kuppuraj	TBD
hid325	J. Robert Langlois	This is my paper about data sharing
hid326	Mahendrakar, Mohan	Benchmarking a BigData Docker deployment
hid327	Marks, Paul	The Impact of Self-Driving Cars on the Economy
hid328	Dhanya Mathew	Big data analytics in data center network monitoring
hid329	Ashley Miller	Big Data Analytics and the Impact on Personal Privacy
hid330	Janaki Mudvari Khatiwada	MQTT for Big Data and Edge Computing
hid331	Tyler Peterson	Big Data Applications in Using Neural Network for Medical Image Analysis
hid332	Judy Phillips	Big Data Analytics in Developing Countries
hid333	Anil Ravi	Natural language processing (NLP) for speech analysis and voice recognition
hid334	Peter Russell	Advancements in Drone Technology for the US Military
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hid336	Jordan Simmons	Big Data Analysis for Computer Network Defense
hid337	Ashok Reddy Singam	Natural Language Processing (NLP) to analyze human speech data
hid338	Sriramulu, Anand	Benchmarking a BigData Docker deployment
hid339	Hady Sylla	Benchmarking a BigData Docker deployment
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hid342	Udoyen, Nsikan	Still under consideration
hid343	Usifo, Borga	None

hid345	Wood, Ross	Big Data Analytics and influence on althetics.
hid346	Zachary Meier	This is my paper about the other abc
hid347	Jeramy Townsley	Sociological Methods of Big Data
hid348	Budhaditya Roy	Something about NOSQL people DID NOT DO IN i524 Figure out a topic which is not covered need approval



[illegible]

# Big Data Analysis for Computer Network Defense

Jordan Simmons  
Indiana University  
Smith Research Center  
Bloomington, IN 47408, USA  
jomsimm@iu.edu

## ABSTRACT

Computer security threats and attacks are constantly evolving. Everyday, hackers are creating new techniques to bypass network security for the purpose of malicious attacks. To keep up with the changing intrusion technologies, the technologies that defend these attacks need to constantly evolve also. Modern day technologies use deep learning techniques to monitor network activity, and detect malicious code. We will provide an overview of network security and modern technologies being used to protect computer systems and networks.

## KEYWORDS

i523, HID336, Computer Network Security, Big Data Analysis, Deep Learning, Intrusion Detection Systems,

## 1 INTRODUCTION

Everyday a different computer network is being breached with the intent to cause harm to the system or to steal valuable data. Computer hackers are constantly creating new ways to evade network security and create malicious code that can not be detected by security systems. As malicious technologies continue to advance, the technologies that defend against these technologies need to adapt with these advances. The problem with computer network defence is that the technologies used to breach systems constantly change. Once a solution is created to defend a technology, a new malicious technology could be created the next day. Today many security specialist are using deep learning technologies to monitor network intrusions, and detect malicious code. In order to better understand computer network defense, an overview of modern attacks, network data collection processes, and the technologies used to analyze network data is provided.

## 2 MODERN NETWORK ATTACKS

## 3 NETWORK DATA COLLECTION

In case you need to create tables, you can do this with online tools (if you do not mind sharing your data) such as <https://www.tablesgenerator.com/> or other such tools (please google for them). They even allow you to manage tables as CSV.

or generate them by hand while using the provided template in Table??. Not ethat the caption is before the tabular environment.

## 4 NETWORK DATA ANALYSIS

## 5 CONCLUSION

## ACKNOWLEDGMENTS

The authors would like to thank Dr. Gregor von Laszewski for his support and suggestions to write this paper.

## REFERENCES

We include an appendix with common issues that we see when students submit papers. One particular important issue is not to use the underscore in bibtex labels. Sharelatex allows this, but the proceedings script we have does not allow this.

When you submit the paper you need to address each of the items in the issues.tex file and verify that you have done them. Please do this only at the end once you have finished writing the paper. To d this cange TODO with DONE. However if you check something on with DONE, but we find you actually have not executed it correctly, you will receive point deductions. Thus it is important to do this correctly and not just 5 minutes before the deadline. It is better to do a late submission than doing the check in haste.

### A ISSUES

DONE:

Example of done item: Once you fix an item, change TODO to DONE

### A.1 Assignment Submission Issues

Do not make changes to your paper during grading, when your repository should be frozen.

### A.2 Uncaught Bibliography Errors

Missing bibliography file generated by JabRef

Bibtex labels cannot have any spaces, \_ or & in it

Citations in text showing as [?]: this means either your report.bib is not up-to-date or there is a spelling error in the label of the item you want to cite, either in report.bib or in report.tex

### A.3 Formatting

Incorrect number of keywords or HID and i523 not included in the keywords

Other formatting issues

## A.4 Writing Errors

Errors in title, e.g. capitalization

Spelling errors

Are you using *a* and *the* properly?

Do not use phrases such as *shown in the Figure below*. Instead, use *as shown in Figure 3*, when referring to the 3rd figure

Do not use the word *I* instead use *we* even if you are the sole author

Do not use the phrase *In this paper/report we show* instead use *We show*. It is not important if this is a paper or a report and does not need to be mentioned

If you want to say *and* do not use *&* but use the word *and*

Use a space after `. , :`

When using a section command, the section title is not written in all-caps as format does this for you

`\section{Introduction}` and NOT `\section{INTRODUCTION}`

## A.5 Citation Issues and Plagiarism

It is your responsibility to make sure no plagiarism occurs. The instructions and resources were given in the class

Claims made without citations provided

Need to paraphrase long quotations (whole sentences or longer)

Need to quote directly cited material

## A.6 Character Errors

Erroneous use of quotation marks, i.e. use “quotes”, instead of ” ”

To emphasize a word, use *emphasize* and not “quote”

When using the characters `& # % _` put a backslash before them so that they show up correctly

Pasting and copying from the Web often results in non-ASCII characters to be used in your text, please remove them and replace accordingly. This is the case for quotes, dashes and all the other special characters.

If you see a `ffigure` and not a `figure` in text you copied from a text that has the `fi` combined as a single character

## A.7 Structural Issues

Acknowledgement section missing

Incorrect README file

In case of a class and if you do a multi-author paper, you need to add an appendix describing who did what in the paper

The paper has less than 2 pages of text, i.e. excluding images, tables and figures

The paper has more than 6 pages of text, i.e. excluding images, tables and figures

Do not artificially inflate your paper if you are below the page limit

## A.8 Details about the Figures and Tables

Capitalization errors in referring to captions, e.g. Figure 1, Table 2

Do use *label* and *ref* to automatically create figure numbers

Wrong placement of figure caption. They should be on the bottom of the figure

Wrong placement of table caption. They should be on the top of the table

Images submitted incorrectly. They should be in native format, e.g. `.graffle`, `.pptx`, `.png`, `.jpg`

Do not submit eps images. Instead, convert them to PDF

The image files must be in a single directory named “images”

In case there is a powerpoint in the submission, the image must be exported as PDF

Make the figures large enough so we can read the details. If needed make the figure over two columns

Do not worry about the figure placement if they are at a different location than you think. Figures are allowed to float. For this class, you should place all figures at the end of the report.

In case you copied a figure from another paper you need to ask for copyright permission. In case of a class paper, you must include a reference to the original in the caption

Remove any figure that is not referred to explicitly in the text (As shown in Figure ..)

Do not use `textwidth` as a parameter for `includegraphics`

Figures should be reasonably sized and often you just need to add `columnwidth`

e.g.  
`/includegraphics[width=\columnwidth]{images/myimage.pdf}`  
`re`





hid336 hid337 hid338 hid339 hid340 hid341 hid342 hid343 hid345 hid346 hid347 hid348  
hid101 hid102 hid104 hid105 hid106 hid107 hid109

# Big Data for Edge Computing

Ben Trovato  
Institute for Clarity in Documentation  
P.O. Box 1212  
Dublin, Ohio 43017-6221  
trovato@corporation.com

G.K.M. Tobin  
Institute for Clarity in Documentation  
P.O. Box 1212  
Dublin, Ohio 43017-6221  
webmaster@marysville-ohio.com

Gregor von Laszewski  
Indiana University  
Smith Research Center  
Bloomington, IN 47408, USA  
laszewski@gmail.com

## ABSTRACT

This paper provides a sample of a  $\LaTeX$  document which conforms, somewhat loosely, to the formatting guidelines for ACM SIG Proceedings.

## KEYWORDS

Big Data, Edge Computing i523

## 1 INTRODUCTION

Put here an introduction about your topic. We just need one sample reference so the paper compiles in LaTeX so we put it here [? ].

## 2 FIGURES

In Figure 1 we show a fly. Please note that because we use just columnwidth that the size of the figure will change to the column-width of the paper once we change the layout to final. Changing the layout to final should not be done by you. All figures will be listed at the end.

[Figure 1 about here.]

When copying the example, please do not check in the images from the examples into your images directory as you will not need them for your paper. Instead use images that you like to include. If you do not have any images, do not create the images folder.

## 3 TABLES

In case you need to create tables, you can do this with online tools (if you do not mind sharing your data) such as <https://www.tablesgenerator.com/> or other such tools (please google for them). They even allow you to manage tables as CSV.

or generate them by hand while using the provided template in Table??. Not that the caption is before the tabular environment.

[Table 1 about here.]

## 4 LONG EXAMPLE

If you like to see a more elaborate example, please look at report-long.tex.

## 5 CONCLUSION

Put here a conclusion. Conclusions and abstracts must not have any citations in the section.

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4

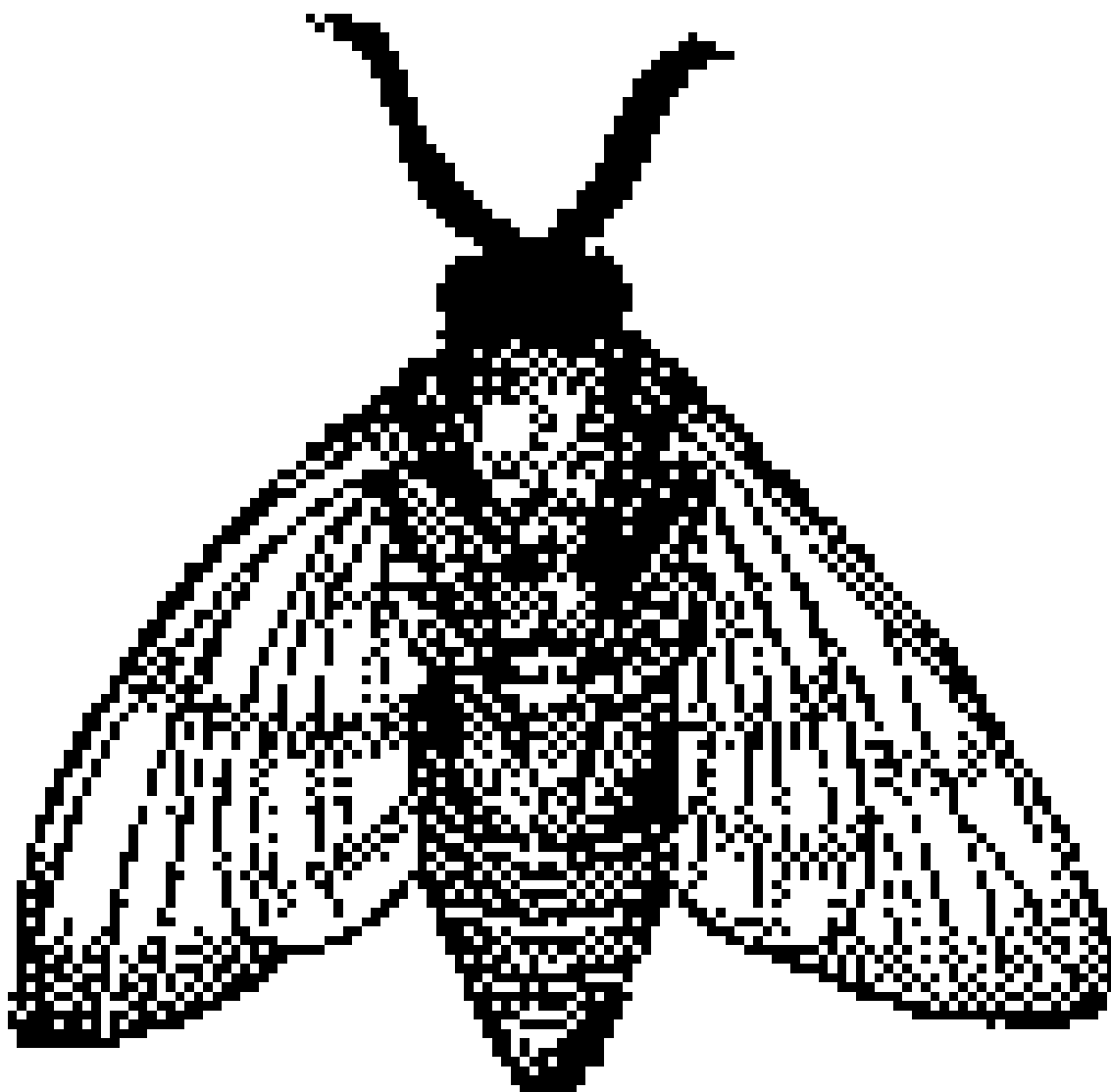


Figure 1: Example caption

LIST OF TABLES

1	My caption	6
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1	2	3
4	5	6
7	8	9

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# Big Data for Edge Computing

Ben Trovato  
Institute for Clarity in Documentation  
P.O. Box 1212  
Dublin, Ohio 43017-6221  
trovato@corporation.com

G.K.M. Tobin  
Institute for Clarity in Documentation  
P.O. Box 1212  
Dublin, Ohio 43017-6221  
webmaster@marysville-ohio.com

Gregor von Laszewski  
Indiana University  
Smith Research Center  
Bloomington, IN 47408, USA  
laszewski@gmail.com

## ABSTRACT

This paper provides a sample of a  $\LaTeX$  document which conforms, somewhat loosely, to the formatting guidelines for ACM SIG Proceedings.

## KEYWORDS

Big Data, Edge Computing i523

## 1 INTRODUCTION

Put here an introduction about your topic. We just need one sample reference so the paper compiles in LaTeX so we put it here [? ].

## 2 FIGURES

In Figure 1 we show a fly. Please note that because we use just columnwidth that the size of the figure will change to the column-width of the paper once we change the layout to final. Changing the layout to final should not be done by you. All figures will be listed at the end.

[Figure 1 about here.]

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or generate them by hand while using the provided template in Table??. Not that the caption is before the tabular environment.

[Table 1 about here.]

## 4 LONG EXAMPLE

If you like to see a more elaborate example, please look at report-long.tex.

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Put here an conclusion. Conclusions and abstracts must not have any citations in the section.

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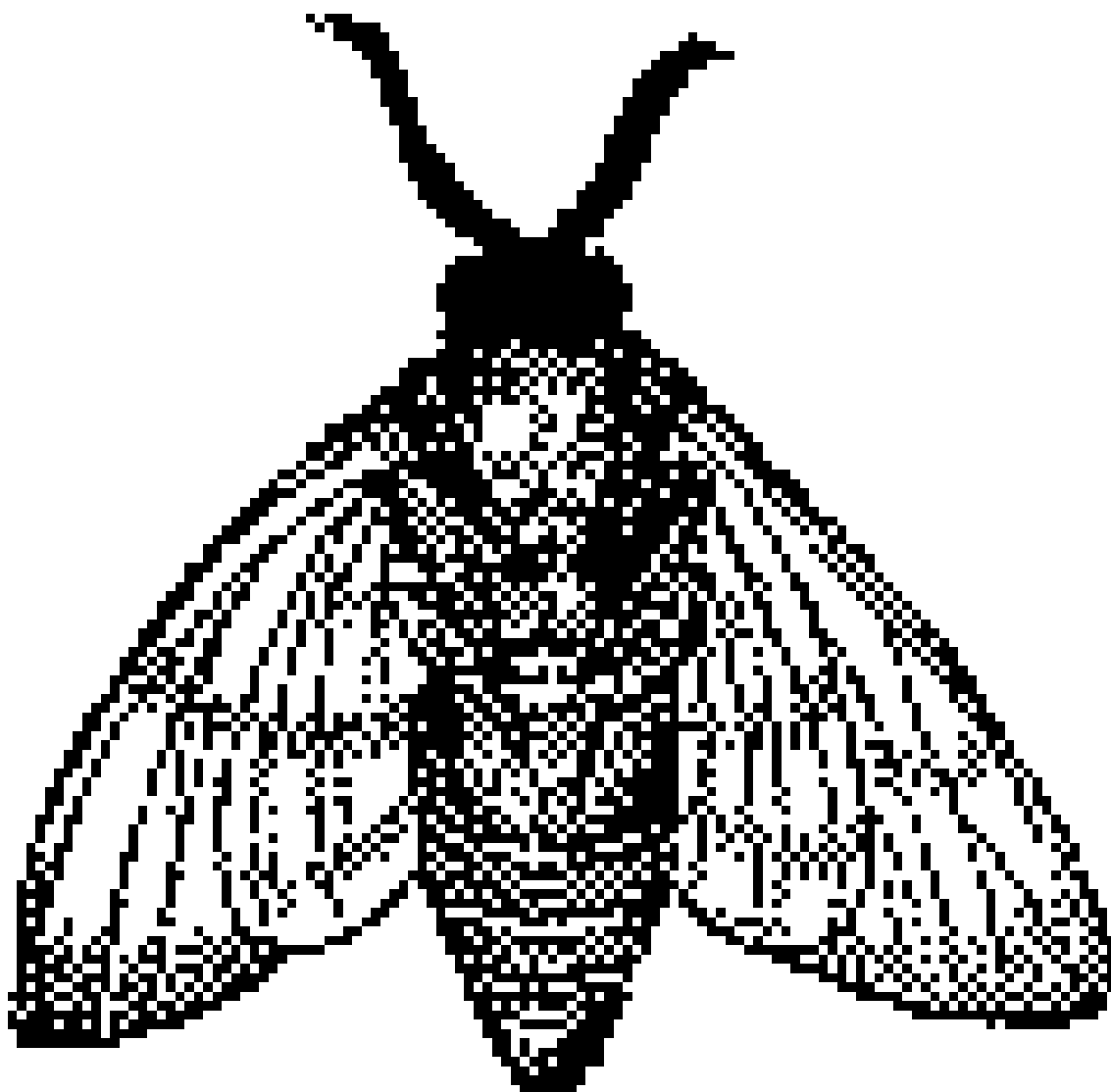


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# Big Health Data from Wearable Electronic Sensors (WES) and the Treatment of Opioid Addiction

Sean M. Shiverick  
Indiana University Bloomington  
smshiver@indiana.edu

## ABSTRACT

Wearable electronic sensors (WES) generate to collect vital health data in the treatment of opioid addiction.

## KEYWORDS

Big Data Applications, Health Analytics, Wearable Sensors, i535, HID335

## 1 INTRODUCTION

Wearables and the Internet of Things for Health,

In the increasingly connected digital age, personal electronic devices are generating tremendous volumes of data with important applications for health analytics. Wearable electronic sensors (i.e., *wearables*) and fitness monitors (e.g. FitBit, iWatch) can record our movements and vital physiological measures such as heart rate, temperature, and blood pressure [4]. Consumers are using wearables to self-monitor stress and hypertension. In addition, wearable sensors can be used to help track recovery following medical procedures such as surgery [1]. Emerging forms of personalized health care are arising in which individuals self-monitor and manage their own health in partnership with care providers.

### 1.1 Drug Addiction as an Illness

For millions of people struggling with substance abuse and dependency in the U.S., addiction and relapse are chronic health conditions [2]. Drug addiction has many similar characteristics to other chronic medical illnesses; however, there are unique challenges to the treatment of addiction illnesses. For example, drug addicted patients undergo intense detoxification in rehabilitation treatment programs, but then are released back into the same environment associated with their drug use. The lack of continuity in the treatment of addiction disorders, leaves addicts in recovery at high risk for relapse into substance use and abuse. Second, individuals with addiction disorders present for care to emergency rooms after acute intoxication, often following law enforcement interventions. Emergency personal and very capable at crisis intervention for drug overdose, but lack resources to evaluate severe addiction disorders or provide follow-up. Furthermore, addicted individuals seeking treatment often relapse at night or on weekends when treatment centers are not open. Various theories of addiction and relapse have been proposed. According to the classical conditioning model, situational cues or events can elicit a motivational state underlying relapse to drug use. A slightly more complex model suggests that addictive behavior can be reinstated after extinction of dependency by exposure to drugs, drug-related cues, or environmental stressors

[9]. Understanding that a user's affective response to cues in the environmental can lead to relapse and drug use are key to developing strategies for prevention and treatment.

### 1.2 Medication Abuse and Opioid Addiction

The nature of the opioid epidemic

Advances in the Psychosocial Treatment of Addiction The Role of Technology in the Delivery of Evidence-Based Psychosocial Treatment [8]

### 1.3 Mobile Addiction Interventions

Mobile health applications (i.e., apps) have been used for public health education, remote monitoring, data collection, diagnostics, in the treatment of Drug Abuse and Addiction [2].

Wireless Technologies, Ubiquitous Computing and Mobile Health: Application to Drug Abuse Treatment and Compliance with HIV Therapies [2]

Leveraging Technology to enhance addiction treatment and recovery [7]

Contributions of mobile technologies to addiction research [10]

Potential Roles for New Communication Technologies in Treatment of Addiction [6]

A smartphone application to support recovery from alcoholism: A randomized controlled trial [5]

### 1.4 Wearable Sensors

Real-Time Mobile Detection of Drug Use with Wearable Biosensors: A Pilot Study [3]

### 1.5 LoRa Backscatter and tattoo sensors

If you like to see a more elaborate example, please look at report-long.tex.

### 1.6 Psychosocial Interventions for Addiction Treatment

## 2 FIGURES

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hid336 hid337

# Natural Language Processing (NLP) to analyze human speech data

Ashok Reddy Singam  
Indiana University  
711 N Park Ave  
Bloomington, Indiana 47408  
asingam@iu.edu

Anil Ravi  
Indiana University  
711 N Park Ave  
Bloomington, Indiana 47408  
anilravi@iu.edu

## ABSTRACT

Extracting meaningful information from large volumes of unstructured human language is a challenging big data problem.

## KEYWORDS

i523, HID333, HID337, Natural Language Processing

## 1 INTRODUCTION

## 2 TODO SECTION1

## 3 TODO SECTION2

## 4 TODO SECTION3

## 5 CONCLUSION

## ACKNOWLEDGMENTS

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