

UNIVERSITY OF BERGEN  
DEPARTMENT OF INFORMATICS

---

# Automatic Drum Transcription using Deep Learning

---

*Author:* Runar Fosse

*Supervisor:* Pekka Parviainen



UNIVERSITETET I BERGEN  
*Det matematisk-naturvitenskapelige fakultet*

January, 2025

Add correct  
NT faculty,  
instead of  
MATNAT

## **Abstract**

Lorem ipsum dolor sit amet, his veri singulis necessitatibus ad. Nec insolens periculis ex. Te pro purto eros error, nec alia graeci placerat cu. Hinc volutpat similique no qui, ad labitur mentitum democritum sea. Sale inimicus te eum.

No eros nemore impedit his, per at salutandi eloquentiam, ea semper euismod meliore sea. Mutat scaevola cotidieque cu mel. Eum an convenire tractatos, ei duo nulla molestie, quis hendrerit et vix. In aliquam intellegam philosophia sea. At quo bonorum adipisci. Eros labitur deleniti ius in, sonet congrue ius at, pro suas meis habeo no.

### **Acknowledgements**

Est suavitate gubergren referrentur an, ex mea dolor eloquentiam, novum ludus suscipit in nec. Ea mea essent prompta constituam, has ut novum prodesset vulputate. Ad noster electram pri, nec sint accusamus dissentias at. Est ad laoreet fierent invidunt, ut per assueverit conclusionemque. An electram efficiendi mea.

Runar Fosse  
Monday 27<sup>th</sup> January, 2025

# Contents

<b>1</b>	<b>Introduction</b>	<b>1</b>
1.1	Background . . . . .	1
1.1.1	Listings . . . . .	2
1.1.2	Figures . . . . .	2
1.1.3	Tables . . . . .	3
1.1.4	Git . . . . .	3
	<b>Glossary</b>	<b>4</b>
	<b>List of Acronyms and Abbreviations</b>	<b>5</b>
	<b>Bibliography</b>	<b>6</b>
<b>A</b>	<b>Generated code from Protocol buffers</b>	<b>7</b>

# List of Figures

1.1	Caption for flowchart . . . . .	2
-----	---------------------------------	---

# List of Tables

1.1	Caption of table . . . . .	3
-----	----------------------------	---

# Listings

1.1	Short caption . . . . .	2
1.2	Hello world in Golang . . . . .	2
A.1	Source code of something . . . . .	7

# Chapter 1

## Introduction

Natum mucius vim id. Tota detracto ei sed, id sumo sapientem sed. Vim in nostro latine gloriatur, cetero vocent vim id. Erat sanctus eam te, nec assueverit necessitatibus ex, id delectus fabellas has.

Lorem ipsum dolor sit amet, iisque feugait quo eu, sed vocent commodo aliquid an. Minim suavitate dissentiet te eos. Dicunt eirmod adolescens no sed. Esse nonumy melius an mel, mei ut maiorum luptatum. Eu eum iudico scripta, movet option assueverit mel ex, mea at odio noluisse efficiendi. Ad vidisse atomorum conceptam quo, saepe volumus philosophia eos eu, delenit conceptam no usu.

Vituperata sadipscing deterruisset ei mel, at qui nonumy blandit. Delectus dissentiet et sea, ut rebum regione numquam nam, cum ex augue constituto. Te per nihil semper. Posse voluptatum qui an, aliquando democritum disputando id quo, everti perpetua cu vim. Laudem fabellas mei an, eu reprimique quaerendum usu. Quidam prompta fabellas ne est.

### 1.1 Background

Lorem ipsum dolor sit amet, cu graecis propriae sea. Eam feugiat docendi an, ei scripta blandit pri. Nonumes delicata reprimique nam ut. Eu suas alterum concludaturque est, ferri mucius sensibus id sed [1].

We can do glossary for acronymes and abriviations also: Software as a Service (SaaS). As you see the first time it is used, the full version is used, but the second time we use SaaS the short form is used. It is also a link to the lookup.



### 1.1.1 Listings

You can do listings, like in Listing 1.1

Listing 1.1: Look at this cool listing. Find the rest in Appendix A.1

```
1 $ java -jar myAwesomeCode.jar
```

You can also do language highlighting for instance with Golang: And in line 6 of Listing 1.2 you can see that we can ref to lines in listings.

Listing 1.2: Hello world in Golang

```
1 package main
2
3 import "fmt"
4
5 func main() {
6     fmt.Println("hello world")
7 }
```

### 1.1.2 Figures

Example of a centred figure

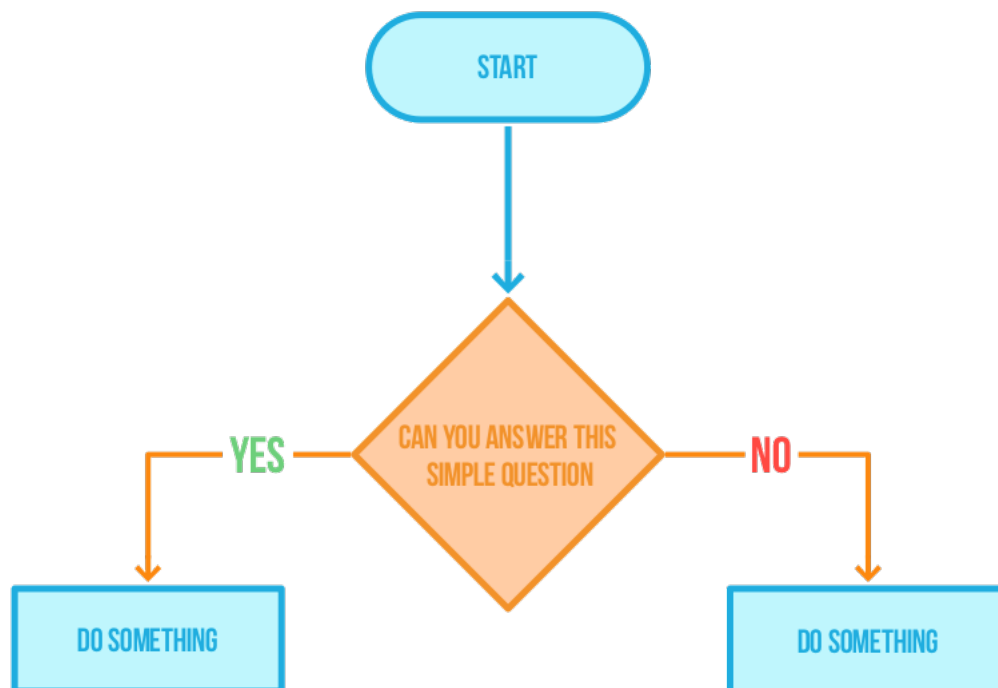


Figure 1.1: Caption for flowchart

Credit: Acme company makes everything <https://acme.com/>

### 1.1.3 Tables

We can also do tables. Protip: use <https://www.tablesgenerator.com/> for generating tables.

Table 1.1: Caption of table

Title1	Title2	Title3
data1	data2	data3

### 1.1.4 Git

Git is fun, use it!

# Glossary

**Git** Git is a Version Control System (VCS) for tracking changes in computer files and coordinating work on those files among multiple people.

# List of Acronyms and Abbreviations

**SaaS** Software as a Service.

**VCS** Version Control System.

# Bibliography

- [1] Diego Ongaro and John Ousterhout. In search of an understandable consensus algorithm. In *Proceedings of the 2014 USENIX Conference on USENIX Annual Technical Conference*, USENIX ATC'14, pages 305–320, Berkeley, CA, USA, 2014. USENIX Association. ISBN 978-1-931971-10-2.

## Appendix A

### Generated code from Protocol buffers

Listing A.1: Source code of something

```
1 System.out.println("Hello Mars");
```