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**Ouro Preto**  
**Minas Gerais, Brasil**

**December/2017**

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## EXECUTIVE SUMMARY

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## RESUMO

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## ABSTRACT

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# LIST OF SYMBOLS AND ABBREVIATIONS

**DoF** Degrees of Freedom

**FRVF** Forbidden Region Virtual Fixture

# GLOSSARY

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# 1 INTRODUCTION

Call acronym: Degrees of Freedom (DoF), Forbidden Region Virtual Fixture (FRVF).

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## 2 OBJECTIVE

On line citation Earnshaw (2014). Normal cite: (EARNSHAW, 2014). Multiple citation: (AZUMA, 1997; EARNSHAW, 2014).

### 2.1 Topic a

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### 2.2 Topic b

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### 3 EXPERIMENTAL PROCEDURE

It should contain the description of the study area and materials (data bank, data collection, images, etc.) and methodological procedures (experiments, interviews, statistical methods, etc.) that will be used to carry out the work, so that others researchers can reproduce the study. It can be presented as subdivisions below.

- **AHA:** *The American Heart Association Database for Evaluation of Ventricular Arrhythmia Detectors.*
- **MIT–BIH:** *The Massachusetts Institute of Technology–Beth Israel Hospital Arrhythmia Database.*
- **ESC:** *The European Society of Cardiology ST-T Database* (90 records of 2 hours each).
- **NST:** *The Noise Stress Test Database.*
- **CU:** *The Creighton University Sustained Ventricular Arrhythmia Database.*

#### 3.1 MIT-BIH

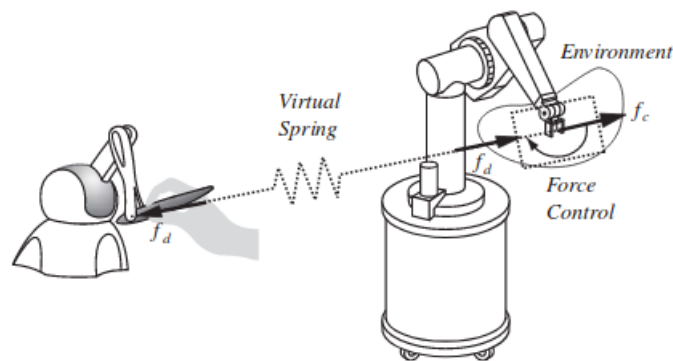


Figure 1 – Beat examples.

Source: (EARNSHAW, 2014, p. 13)

Table 1 – Records used and number of representatives of each class for each of the partitions.

Partition	Registry	Class N	Class SVEB	Class VEB
DS1	101, 106, 108, 109, 112, 114, 115, 116, 118, 119, 122, 124, 201, 203, 205, 207, 208, 209, 215, 220, 223, 230	45543	782	3469
DS11	101, 106, 108, 109, 114, 115, 116, 119, 122, 209, 223	22249	474	1615
DS12	112, 118, 124, 201, 203, 205, 207, 208, 215, 220, 230	23294	308	1854
DS2	100, 103, 105, 11, 113, 117, 121, 123, 200, 202, 210, 212, 213, 214, 219, 221, 222, 228, 231, 232, 233, 234	44049	1808	3143
Total		89592	2590	6612

### 3.1.1 Sub section

#### 3.1.1.1 Sub sub section

Equation example:

$$w_{ij} = e_{i,j} = \sqrt{(x_i - x_j)^2 + (y_i - y_j)^2 + (z_i - z_j)^2}, \quad (3.1)$$

---

#### Algorithm 1 Euclid's algorithm

---

```

1: procedure EUCLID( $a, b$ ) ▷ The g.c.d. of  $a$  and  $b$ 
2:    $r \leftarrow a \bmod b$ 
3:   while  $r \neq 0$  do ▷ We have the answer if  $r$  is 0
4:      $a \leftarrow b$ 
5:      $b \leftarrow r$ 
6:      $r \leftarrow a \bmod b$ 
7:   end while
8:   return  $b$  ▷ The gcd is  $b$ 
9: end procedure

```

---

$$s(v) = \frac{1}{1 + \exp(-v)} \quad (3.2)$$

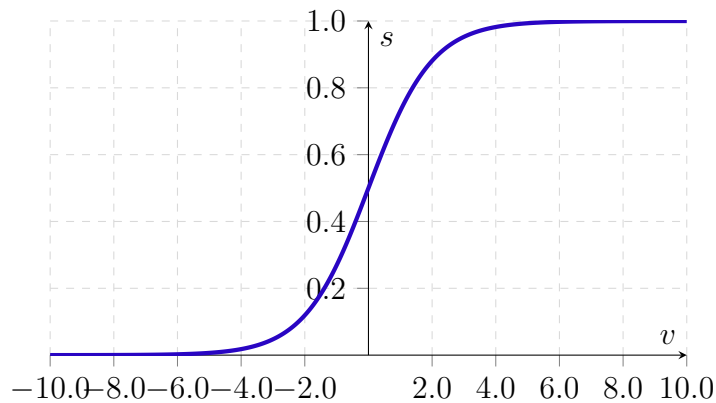


Figure 2 – Behavior of the sigmoid function for values between -10 and 10.

## 4 RESULTS

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## 5 DISCUSSION

To present the discussions of the results obtained in the present study with those of previous publications, highlighting their contribution on the subject.

## **6 CONCLUSION**

Mention the main conclusions of the dissertation highlighting the points mentioned in the specific objectives.

## **7 RECOMMENDATIONS**

Mention the possible developments of the research and the suggestions for the continuation of the work.



## REFERENCES

AZUMA, R. T. A survey of augmented reality. **Presence: Teleoperators and virtual environments**, MIT Press, v. 6, n. 4, p. 355–385, 1997. Cited on page 8.

EARNSHAW, R. A. **Virtual reality systems**. [S.l.]: Academic press, 2014. Cited 2 times on pages 8 and 9.

## APPENDIX A

### Title

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## ANNEX A

### Title

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