

# *Contents*

<b>Abbreviations</b>	<b>xix</b>
<b>Contents</b>	<b>xxiii</b>
<b>1 Introduction</b>	<b>1</b>
<b>2 Fundamentals</b>	<b>5</b>
2.1 Data Representation . . . . .	5
2.2 Artificial Neural Networks . . . . .	12
2.3 Open and Closed Set Classification . . . . .	25
<b>3 Document Information Extraction And Classification Overview</b>	<b>29</b>
3.1 Document Layout: Transcending Single Pages . . .	34
3.2 Document Classification of Historical Manuscripts .	38
3.3 Information Extraction in Historical Manuscripts . .	43
<b>4 Act Segmentation and Layout Analysis</b>	<b>49</b>
4.1 Problem Definition . . . . .	50
4.2 A Whole-Book Evaluation Measure . . . . .	57
4.3 Restricted Multi-page Act Segmentation . . . . .	60
4.4 Multi-page Act Fine-Grained Segmentation . . . . .	71
4.5 Simancas Archive Segmentation . . . . .	92
4.6 Discussion . . . . .	98
<b>5 Document Classification</b>	<b>103</b>
5.1 Problem Definition . . . . .	105
5.2 Feature Selection and Extraction for CBIDC . . . .	108
5.3 Open Set Classification in AHPC . . . . .	109
5.4 Discussion . . . . .	119

## Contents

---

<b>6</b>	<b>Information Extraction in Structured Documents</b>	<b>121</b>
6.1	Problem Definition . . . . .	122
6.2	Evaluation Measures . . . . .	128
6.3	Information Extraction in HisClima Tables . . . . .	130
6.4	Discussion . . . . .	141
<b>7</b>	<b>Conclusions</b>	<b>143</b>
7.1	Scientific Outcomes . . . . .	145
7.2	Projects . . . . .	148
7.3	Open Source Software . . . . .	148
7.4	Future Work . . . . .	149
	<b>Appendices</b>	<b>153</b>
<b>A</b>	<b>Datasets</b>	<b>155</b>
A.1	Alcar - HOME . . . . .	155
A.2	Archivo Histórico Provincial de Cádiz (AHPC) . . .	158
A.3	Hisclima . . . . .	162
A.4	RCSA Dataset . . . . .	165
	<b>List of Figures</b>	<b>169</b>
	<b>List of Tables</b>	<b>171</b>
	<b>Bibliography</b>	<b>173</b>