Subject Index

ACCENT 237
ACF 184
acoustic
– cues 421
– distortion 251
– features 314
– model 262
– properties of syllables 229
– recognition 237
– variability 301
acoustic-prosodic boundaries 166
action units 328
adaptive dialogue system 433
AFA 46
aggregation 87
AGILE 89
`ajka` 157
algorithm
– DTW 201
– ECGI 15
– expectation maximisation 315
– genetic 301
– longest-matching 122
– naïve Bayes 151
– pitch-mark detection 224
– PSOLA 223, 228
– sense disambiguation 11
– Viterbi 217
Alparon 333
ambiguity
– casual (lexical) 5
– lexical 400
– of prepositional groups 139
– of reference 400
– referential 357
– regular (paradigm-internal) 5
– structural 400
Amsterdam 51
analysis
– lexical 390
– syntactical 387
analytic tree structure 45
anaphora 400
– intersentential 346
– intrasentential 346
– replacement 147
– resolution 147, 345, 357, 410
ANN 311
annotation scheme 410
ANOVA 283
anti-quadruplets 238
argumentation act 364
ARTIC 223
ATN 35, 237, 390
ATS 45, 75
authentication voice-based 375
autocorrelation function 184
automated
– dialogue interface 405
– dialogue system design 405
automated analysis of abstract 69
automatic
– classification of different prosodic events 165
– dialogue system 171
– functor assignment system 46
– morphological disambiguation 3
– segmentation 224
– speech recognition 283, 307
– speech segmentation 201
autoregressive hidden Markov model 207
autoregressive model 192
AVIP 423

back-propagation 311
Bayes naïve algorithm 151
BDGEO 18
Belarussian speech recognition 301
BFP-algorithm 345
bidirectional chart parsing 21
bidirectionality 21
bidirectionality in parsing 21
binary decision trees 225
BNC 10
bootstrapping 157, 159
bootstrapping procedure 11
Boston University Radio News Corpus 369
bottom-up syntactic parsing 63
Brill tagger 6
British National Corpus 10

Brno 51, 301
Brown Corpus 29, 160

C4.5 50, 193
caching method 221
caching scheme 217
Cambridge statistical modelling toolkit 212
Catalan text-to-speech 277
categorial grammar 51
centring algorithms 345
cepstral coefficients 298
cepstral train 184
cepstrum 298
chart parsing 21, 81
Chinese
– machine translation 125
– segmentation 122
chunk of verbs 116
chunking corpus-based 15
classification
– by ensemble voting 31
– of texts 151
classifiers 27
– ensemble of 27
– transformation-based 27
– tree-based 27
clustering
– of words 255
– tree-based 225
clusterization 241
ČNK 7, 75
co-articulation 229
codebook
– optimal size 209
– vector 299
coherence maintenance 357
collaborative principle 408
collocation verbonomial 141
combinatory dictionary 357
communication multi-modal 327
compound
– sentences 145
– verb groups 115
– word 39, 127
– word decomposition 40
– word in Chinese 121
compound word hyphenation 160
compound words 160
computationally efficient parser 341
concatenative speech synthesis 189
concept model 445
concept structure 447
conceptual dependecy theory 446
consensus vote filter 31
constraint grammar 3, 16, 161
contextual reference 87
continuous styles 195
contrast expressed phonetically 289
conversational games 363
conversion grapheme-to-phoneme 274
coordination of noun phrases 57
CORBA 242
corpus
– annotation 75
– Anthology of Russian Short Stories 100
– BDGEO 18
– bilingual 133
– Boston University Radio News 369
– broadcast news CSR Hub-4 257
– Brown 29, 160
– continuous-read-speech 224
– CZBN 212
– DESAM 115
– diphone 191
– Gopolis 175
– Lexesp 21, 24
– Lidové Noviny 212
– MEDLINE 153
– MULTEXT-East 174
– newspaper Yugoslav 58
– of human-human dialogues 333
– of newspaper articles 145
– parallel German-French 133
– Penn Treebank 21
– Penn Treebank II 24
– PolyPhone 339
– single-speaker 224
– SPEECHDAT 172
– Susanne 29
– text 99
–– classification 99
–– parametrisation 99
–– statistic 99
– TIMIT 316
– Večer 257
– Wall Street Journal 15
– WBUR 369
– WSJ 17, 96
cover-optimal pattern set 159
CrossLexica dictionary 361

CTIMIT 180
cue-phrases 341
cue-words 342
Curry-Howard correspondence 51
Czech
– city Brno 51, 301
– city Prague 51
– corpus DESAM 115
– dialogue system 259, 399
– functional generative description 139
– hyphenation 160
– language modelling 211
– linguistic School (Jakobson, Mathesius) 53
– morphological analyser 213
– morphological analyser `ajka` 160
– morphology 157, 160
– National Corpus 3, 7, 75
– phonetic rule 226
– recognition system 217
– rule-based POS tagging 3
– speech corpus 319
– telephone system 259
– TTS ARTIC 223
– TTS system 201
– WordNet 110
CZech language Broadcast News corpus 212

database
– OGI Stories 285
– sound 243
– TIGIDITS 265
DCG 69, 117, 342
decision tree 225, 369
dependency-based categorial grammar 51
DESAM 115
DGL 51
DIALOGIC D/21D board 262
dialogue
– active strategy 427
– agents 445
– automation
–– finite state approach 333
– control 333
– cooperative 415
– corpus 333
– Danish 345
– engine 351
– for information retrieval 415
– formal description 434
– history 364
– human operator strategies 333
– human-human strategies 333
– intentional structure 365
– intentions 421
– interactional goals 407
– interface automated 405
– man-machine 357
– management 334
– management system 333
– manager 333, 385, 399
– manager Alparon 333
– markup language 435
– model 335, 363
– modelling 363
– obligation-driven 363
– passive strategy 427
– program generation 427
– representation 334
– robustness 343
– scenarios 363
– sequences 405, 407
– spoken 351, 387
– state 439
–– modelling 439
–– predictor 439
– states 363
– strategies 333, 405
–– grammatical aspects 405
–– pragmatic aspects 405
– strategy adaptation 430
– strategy with user initiative 429
– structure 410, 415
– system 259, 399, 421, 439, 445
–– architecture 433
–– Galician 381
–– multi-modal 433
–– Spanish 381
–– SQEL 175
–– structure 433
– technology 351
– train timetable dialogue system 399
– transactional goals 407
– voice-based authentication 375
dictionary
– co-occurrence 238
– combinatory 357
– CrossLexica 361
– grammatical 238
– lexico-logical 109

– machine-readable Chinese 126
– nonverbal 327
– of collocations 238
dictionary-based method 357
diphone corpus 191
diphone-based speech synthesis 189
disambiguation
– lexical 28
– morphological 3
– of free-word order language 3
– of prepositional groups 139
– POS 3
– word sense 93
discontinuous styles 195
discourse
– Danish 345
– deictics 345
– representation 395
– structure 410
discrete cosine transform 265
discrete Kalman estimator 295
discrete-utterance recognition 217
divide and rule strategy 13
DML 435
document classification 151
DTW 201
dynamic model of syntax 38
dynamic semantics of conversations 393
dynamic syntax 33
dynamic time warping 201

ECS 447
Edinburgh 51
ellipsis 400
elliptical phrases 357
emblems
– concepts 327
– emotional 327
emoticon 331
emoticon examples 331
EMOVS 277
emphasis expressed phonetically 289
endpoint detection 177
energy-based speech detection algorithm 177
epistemic semantics 393
Epos 195, 201
error correcting grammatical inference algorithm 15
ES99-algorithm 345
eSRPD 388
EuroWordNet 110
EVAR 440
extended concept structure 447

face talking 327
facial
D animations 327
– expressions 327
– script language 328
Facial Action Coding System 328
FACS 328
feature
– extraction 296
– unification grammar 340
– vector 256, 285, 296, 314
FFMTIMIT 180
FFT 274
FGD 139
filter
– bank 317
– FIR RASTA 284
filtering
– frequency 265
– multi-band 265
finite-state
– automata 157
– automation dialogue approach 333
– machine 385
– machine decomposition 157
– Markov process 34
– methods 157
– networks 352
– stochastic automata 15
– syntax 388
– transducer 57, 157
FlexVoice text-to-speech system 189
Fourier transformation 298
frequency
– bands 314
– filtering 266
– filtering parameterisation 265
FSA 157, 340
FSM 157, 340, 385
FST 157
FUG 340
full text search 39
functor assignment 45
fuzzy clustering 255
fuzzy DCG grammars 342

fuzzy-robustness 342

Galician dialogue system 381
games conversational 363
Gaussian mixture model 377
generation of dialogue strategy 428
generation of program 427
genetic algorithm 330
genetic algorithms 301
German hyphenation 160
German orthography 39, 131
GMM 314, 377
Gopolis 165, 175
grammar
– ATN-type 237
– categorial 51
– constraint 3
– definite clause 69
– dependency 103
– dependency-based 51
– feature unification 340
– fuzzy DCG 342
– local 57, 158, 237
– Montague 51, 109
grammar checking 63
grammatical agreement 117

Hamming window 224, 262, 268, 285, 299, 306
HelSi 130
hierarchical networks of conceptual constituents 35
HMM 15, 175, 178, 207, 224, 249, 259, 265, 301, 307, 314, 355, 369, 377
– autoregressive 207
– continuous 377
– pitch-synchronous training 228
– semi-continuous 249
– three-state 219, 259
– triphone 225
HPSG 81, 340
HTIMIT 180
HTK toolkit 212, 225
HTPL 354
Hub-4 254, 257
human operator dialogue strategies 337
Hungarian number recognition 307
Hyper Template Planning Language 354
hyphenation 157
– reliable 127
– sense-conveying 39, 127
– vector 129

ICA 310
ILP 118
IMS TreeTagger 137
inclusion problem 158
indirect antecedents in dialogue 357
inductive logic programming 115
inflectional language parsing 63
InfoCity 222
information access in restricted domains 351
information presentation 351
information retrieval 93, 415
information state update scenario 364
information system
– conversational train timetable 440
interaction
– context 417
– structure 417
interactional goals 407
internal language relations 110
INTEX 59
intonation transcription 274
Isadora net 167
ISFER 330
ISIS 339
ISSCO 340
Italian dialogue system 387, 421

Japanese
– dependency grammar 103
– sentence compaction 103
– spoken language 229
Java 351, 427, 437

Kalman
– cepstral coefficients 295
– estimator 295
– filter 207
Kana 229
Klatt synthesiser 192
knowledge
– associated with word 445
– update 393
knowledge-based
– speech recognition 275

λ-calculus 52
language

– engineering 157
– generation 351
– model 253
–– topc-sensitive 253
– model adaptation 351
– model interpolation 257
– modelling 33, 439
–– Czech 211
–– morpheme-based 211
–– probabilistic 33
– statistical model 15
LDA 283, 310
LDC 212
learning
– memory-based 29
– transformation-based 28
– transformation-based error-driven 29
letter-to-phoneme conversion 193
Levinson-Durbin algorithm 192
Levinson-Durbin recursion 296
Lexesp 17, 21
Lexesp Spanish corpus 24
lexical
– analysis 390
– database WordNet 93
– disambiguation 28
lexico-grammar 88
lexico-logical dictionary 109
lexicography 9
lexicon MULTEXT-East 174
LFG 81
LHIP 342
light parsing 341
linear discriminant analysis 283
linear prediction 184
linear predictive coding 295
LKB 237
LLD 109
local grammar 158
local grammars 57
logic programming 69, 115
logico-semantic induction 69
long-term prediction 184
LPC 184, 274
LPC-based speech synthesis 189
LTAG 81
LTP 184

machine
– learning 151, 369
– translation Chinese 125
majority vote filter 31
man-machine interaction 12
MARK-ALISTeR 135
maximum entropy tagging 28
maximum island distance 25
MEDLINE 153
meta-expressions 393
meta-interpreter 341
meta-programming capabilities of logic programming 341
metagrammar 81
METAMODEL 237
MID 25
misclassification cost 50
mixed representation approach 351
MLAlign 136
MLP 311
MobiLuz 171
– Slovene speech corpus 172
– Slovene speech corpus annotations and lexicon 172
– speech tools 172
model
– *n*-gram 253
– trigram 253
Montague grammar 51, 109
morpheme-based language model 211
morpheme-based language modelling 211
morphological
– analyser 392
– analyser Morphy 131
– analysis 65
–– adaptive 66
– disambiguation 3
morphosyntactic
– description 174
– tagging 115, 133
Morphy 131
MULTEXT 340
MULTEXT-East
– (Slovene) tagset 174
– corpus 174
– lexicon 174
multi-modal communication 327
multi-modal dialogue system 433

natural language engineering 157
NCCF 184
NLG 88

noise detection 28
nonverbal
– behaviour 327
– dictionary 327
normal translation algorithm 85, 111
noun phrase coordination 57
NTIMIT 180

Occam's razor 33, 37
OGIvox 187
ontology 110
OOV-rate 213

paradigm filling 240
parametric speech synthesis 189
parser
– chart 21, 81
– design 81
– head-driven 81
– island-driven 21
– probabilistic 81
parsing
– chart 81
– computationally efficient 341
– coordination 57
– head-driven 81
– light 341
– probabilistic 81
– shallow 15
– syntactic 63
– Tomita 83
part-of-speech 107
– disambiguation 157
– disambiguator 3
– tagging 157
passive clause patterns 146
`patgen` 157
pattern
– bootstrapping 159
– generation 157, 159
– language 158
– of passive clause 146
– of word order 140
– technique 157
pattern-driven approach 157
PCA 310
PDT 45, 75, 140
PDTB 85
Penn Treebank 21, 369
perceptual
– properties of syllables 229
performance structure 370
perplexity reduction 258
phone
– model 287
phoneme classification 307
phonemic segmentation 307
phonetic
– context 250
– focus 289
– fund of Russian language 244
– prominence 289
– recognition 237
– rule 226
– segmentation 201, 203
– tagging 174
– transcription 174, 223
– unit 390
– variability 243
pitch
– detection 183
– optimal path tracking 183
– period 237
Polaris 110
Polyphone corpus 339
POS 193
– disambiguation 3, 157
– tagging 15, 27, 157
pragmatic knowledge 439
Prague 51
– Dependency Treebank 45, 75, 85, 140
– School 53
precision and recall 96
precision versus recall 50
prepositional groups 139
probabilistic union model 270
programming
– by visually impaired 427
– dynamic 388
Prolog 69, 342, 427
– Quintus 402
pronunciation dictionary 174
prosodic
– annotation 165, 171
– annotation procedures 165
– boundaries 421, 424
– context 250
– events
– – automatic classification 165
– – labelling 165

– – recognition 165
– units 199
prosodic analysis 195
prosody
– generation 387
– groups 388
– model 389
– modelling 198, 387
– prediction 369, 373
PSet 145
PSOLA 223, 277
PTBII 24

recursive transition networks 352
regular expression
– morpho-syntactic 60
regular expressions 63
relevance feedback 93
reliable pitch detection 183
representation of meaning 446
ReSi 130
RST 90
rule language 8
rule-based tagger for Czech 3
rules of phonetic transcription 223
Russian
– phonemes 245
– phonetic fund 243
– speech synthesis 271

S-list 346
S98-algorithm 345
SAMPA 191
SCFG 24, 341
search sense-conveying 39
segment-based
– speech recognition 307
segmentation
– automatic 224
– prosody groups 389
self-organising neural networks 207
semantic
– analyser 385
– analysis 109, 339
– knowledge 439
– processing 445
– relation 109
– representation 109
– structures 35
– tags 352
semantic network 35
semantical closedness 393
semantics
– dynamic 393
– update 395
sense disambiguation algorithm 11
sense-disambiguated corpus 12
Senseval 9
sentence compaction 103
sentence planning 87
Serbo-Croation language processing 57
SGML 60, 136
shallow parsing 15
Sichere Sinnentsprechende Silbentrennung 39
Sigmark 175
silence detection 262
SINO 415
SiSiSi 39, 44, 127
size-optimal pattern set 159
SLM-toolkit 17
Slovene speech corpus 172
Slovenian
– corpus 253
– corpus Večer 257
– speech data database 165
Smart 95
smiley 327
smoothed ZCR 179
SNABI 172
Spanish
– dialogue 410
– dialogue system 381
– TTS 248
speaker
– authentication 375
– – module 385
– detection 177
– identification 207, 295, 314
– independent recognition 259
– ranking 317
– recognition 375
– verification 375
speaker-independent
– recognition 237
spectral analysis 207
speech
– alignment 174
– analysis 283
– boundaries estimation 178

– continuous 229, 259
– continuous styles 195
– corpus
–– annotation 319
–– Czech 319
– corpus Gopolis 175
– corpus TIMIT 316
– data database (Slovenian) 165
– database 249
– detection 177
– dialect 244
– discontinuous styles 195
– energy-based detection algorithm 177
– patterns 201
– production 295
– recogniser 385
– recognition 211, 237, 243, 253, 259, 265, 268, 275, 283, 301, 307, 319, 339, 439
–– engine 259
–– knowledge-based 237
–– speed up 217
–– system 237
– recognition system 249
– regional 244
– segment database construction 223
– segmentation 174, 201, 249
– styles 195
– synthesis 189, 223, 250, 271, 277, 369
–– allophone-based 271
–– concatenative 189, 271
–– diphone-based 189, 277
–– LPC-based 189
–– parametric 189
–– triphone-based 277
–– US English 189
– synthesiser 201, 351
– transcription 243
– triphone-based units 223
– understanding 439
SPEECHDAT-Slovene 172
SpeechStudio 196
spell checking 39
spoken
– dialogue interactions 351
– language corpus 171
– utterance 388
SQEL 175
SSD 223
SSFSF 317
stochastic finite-state automata 15
stochastic model 21
stratification 157, 159
SUMMIT 309
SVM 311
Swedish children's stories 289
syllable
– consonant-vowel 229
– identification 229
– segmentation 229
syntactic
– analysis in Chinese 121
– model 33
– parsing 63
– structure 370
– transition rules 36
syntactical analysis 387
syntax
– dynamic 33
– model 33
synthesiser
– concatenation-based 223
– Klatt 192
SYSTAR 145
SZCR 179

tagger
– IMS TreeTagger 137
– TnT 174
tagging
– *n*-gram 28
– corpus-based 15
– hierarchies 158
– morphosyntactic 115
– noise detection 28
– rule-based 3
– stochastic 3
– tectogrammatical 75
– transformation-based 28
– unigram 28
tagset
– MRPA 174
– MULTEXT-East 174
talking face 327
TBL 29
TD-PSOLA 174, 227, 248
TEA 151
tectogrammatical annotation 75
tectogrammatical tree structure 45
TEI 133
TelCorreo 375, 381

– basic structure 383
tenor of a dialogue 407
TEX 44, 161
text
– alignment 133
– analysis 69
– balloons 327
– classification 151
– coherence 87
– cohesion 87
– corpora 99
– filtering 151
– generation 87, 145
– grammar 92
– parallel processing 133
– patterns 146
– processing 226
– simplification 145
– syntactical simplification 145
text-independent speaker identification 295
text-to-speech 277, 387
– conversion 195
– converter 381
– synthesis 169, 248, 384
– system 189
–– Flexvoice 189
– system Epos 195
– system S5 174
textual
– coherence 87
– cohesion 87
– relationship 289
TGTS 45, 75
TIGIDITS 265
TIL 51, 85, 109
TiMBL 28
time domain pitch synchronous overlap-add method 248
TIMIT 180, 316
TnT tagger 174
Toeplitz autocorrelation matrix 296
toolkit
– Cambridge statistical modelling 212
– HTK 212, 225
topic
– adaptation 253
– classification 256
– rank 257
– representation 254
topical importance 103
transactional goals 407
Transcriber 322
transcription rule 227
transformation rules 241
transition networks 352
transition states 346
transparent intensional logic 51, 109
TREC 96
tree metrics 372
trie 157
triphone-based speech units 223
TTS 189, 195, 201, 223, 248, 277, 381, 387
– system ARTIC 223

UML 237
Unified Modelling Language 242
utterance
– anaphoric 399
– elliptic 399
– verification 375

vector
– quantisation 299, 314
– ranking 317
Verbmobil 166
ViaVoice 438
Viterbi
– decoding 259
– search 263
Vlny 320
vocabulary recognition system 217
voice activity detection 177
VoiceXML 263

Wall Street Journal corpus 15
WASPS 9
WBUR 369
Weibull function 101
WIMP 433
Witten Bell discounting 214
word
– accent labels 166
– analysis system 39, 127
– atomic components 39
– classification 159
– collocations 109
– compound 121
– compounds 160
– compounds in German 127
– concept model 445

– decomposition 213
– disambiguation 109
– final lengthening 422
– hyphenation 160
– order patterns 140
– phonological 390
– segmentation 121
– sense disambiguation 9, 93
– senses 109
– sensitive 121
– weighting classifier 253
word-form lexicon 174
WordNet 93, 109
WSD 9, 93
WSJ 17, 96

XML 63, 136, 434

Yarowsky technique 12
YOHO 180

ZCR 178
zero-crossing rate 178