

Subject Index

- 3-gram language model 307, 416
- A* search algorithm 301, 308
- acoustic
 - feature vectors 289
 - model 213, 279, 301, 331
 - score caching 192
- AdaBoost.MH 132
- AGILE 34, 38
- ajka 156, 162
- Alfanum system 237
- algorithm
 - A* 301
 - AdaBoost 132
 - EM 338
 - evaluation 437
 - expectation-maximization 143, 202, 226
 - for valency frame generation 149
 - forward-backward 277, 415
 - Inside-Outside 53
 - naïve Bayes 99
 - of automatic term clustering 151
 - of clustering 157
 - Porter’s 70
 - TD-PSOLA 237
 - Viterbi 3, 121, 277, 306
 - Viterbi-I 9
 - Viterbi-L 4, 8
- ALISP 269
- AltaVista 141
- AMDF pitch-extraction 240
- analysis
 - lexical of Classical Chinese 117
 - MelBank 299
 - of sense 299
 - of speech signal 299
 - of text corpora 268
 - PCBF 299
 - PLP 299
 - syntactico-semantic 89
- annotation at word-level 181
- Arabic 11
- ARTIC 173
- artificial neural networks 181
- artificial talking head 445
- ASR 253, 277, 301, 341
- ATIS 461
- audio collection 347
- audio-visual speech recognition 205
- Austrian 26, 341
- automatic
 - dialogue systems 357
 - language independent speech processing 269
 - speech recognition 253
 - transcription 253
- backward Viterbi algorithm 306
- Baldi engine 446
- Basque 41
- Basque corpus 397
- Basurde 389
- Basurde corpus 384, 390
- Baum-Welch re-estimation 207
- Bayes 99
 - algorithm 99
 - classifier 131, 227
- Bayesian
 - inference framework 337
 - networks 365
- BDI 405
- bigram
 - invalid 19
 - language model 446
 - matrix 193
 - model 197, 343
- bilingual French-English corpus 143
- bilingual Springer vector model 111
- bimodal speech recognizer 208
- biphones 331
- blind Web users 453
- BNC 110, 112
- Braille coding of texts 453
- BREF French database 270, 307
- BREF80 French database 288, 307
- British National Corpus 110, 111
- Brown corpus 115
- BRULEX 278
- Bulgarian 34
- bunsetsu 28

- C+ 133
- C++ 41, 262, 406
- Canadian 109
- CART 215, 218, 261, 263
- Catalan 41
- categorization of web sites 65
- CELEX 278
- CER 219
- CGN 277
- Chinese 115
 - Classical 115
 - Modern 115
 - morphology 115
 - syntax 115
- Chomsky 50, 55
- CKD 246
- Classical Chinese 115
- classification
 - of phrases 29
 - of prosody 357
- classification and regression tree 215
- CLEF collection 60
- CLIPS 405, 407
- CLIR 139
- clustering
 - algorithm 151
 - of context vectors 157
 - phoneme-level 173
- COMLEX 278
- communication-oriented representation 34
- comparison of parsing 461
- compounding language 343
- compression rate 30
- concatenative
 - text-to-speech synthesizer 237
- conditional
 - maximum entropy model 131, 132
 - probability 50
 - probability distributions 365
 - responses 317
- cone-shaped kernel distribution 245
- confidence
 - measure 181, 213
 - of word recognition 181
- content words 215
- context pattern 152
- context-independent phoneme set 322
- contextual
 - lexical semantics 369
 - similarity 151, 368
- continuous speech
 - recognition system Speeral 301
- continuous speech recognition 189, 197, 277, 309, 321, 329, 445
- conversational system 413
- Corga 5
- corpus
 - annotated 416
 - annotation 19
 - based similarity measure 151
 - Basque 397
 - Basurde 384, 390
 - BREF 270
 - British National 111
 - Brown 115
 - Corga 5
 - DARPA-TIMIT 294
 - DDAC2000 215
 - dialogue 421
 - DSO 131
 - Dutch spoken 277, 281
 - ECONOMIC 266
 - error detection 19
 - FAIRYTALE 266
 - Hansard 109
 - ILSP/ELEYTHEROTYPIA 369
 - LN 257
 - LOB 115
 - NEGRA 19
 - of German broadcast news 344
 - of Kyoto University 28
 - of patents 65
 - of Reuter 65
 - oriented morphological analyzer 422
 - PoS-tagged 19
 - RECIPE 265
 - representativity 19
 - Slovenian 329, 334
 - Susanne 49, 53
 - UWB_B02 257
 - Verbmobil appointment-scheduling 317
 - WEATHER 266
- corpus-based speech synthesis 265
- CRIM system 307
- CRIN system 307
- cross validation 101, 121, 136
- cross-language information retrieval 139
- cross-language retrieval 57
- cross-language searching 59
- CT 461

- Czech 19, 34, 57, 105, 155, 173, 189, 197, 270, 446
 - continuous speech recognition 197
 - grammar checker 87
 - isolated words 321
 - language 189, 253
 - morphology 148
 - National Corpus 157
 - nouns 159
 - phonemes 191
 - speech recognition 189
 - speech synthesizer Demosthenes 266
 - valency lexicon 147
 - verbs 147
 - WSD 155
- DAMSL 319
- DARPA-TIMIT database 294
- data-driven approach to word splitting 342
- database
 - BRULEX 278
 - CELEX 278
 - COMLEX 278
 - Fonilex of Flemish pronunciation 278
 - M2VTS 206
 - of speech segments 173
 - Polyphone Dutch 205
 - SNABI 333
 - SpeechDat 333
 - SpeechDat - Car 229
 - SpeechDat-E 321
- DDAC2000 corpus 215
- decision tree 160, 181
- decision tree learning 165
- declination patterns 159
- Demosthenes speech synthesizer 266
- dependency
 - analyzer 81
 - grammar 81
 - structure 29
 - tree 81
- detection
 - of non-speech 309
 - of speech 309
- dialogue 413, 447
 - act labelers 381
 - acts 317, 367
 - annotation 319
 - constraints 389
 - controller 377
- corpora 365
- guided 373
- information system 421
- logic 437
- manager 370, 394, 417, 424, 459
- modelling 381
- modelling language 441
- module 453
- planning 429
- representation 407
- spoken 449
- strategy 452
- rule-based 381
- structure 390
- system 357, 377, 381, 437, 449
- SmartKom 357
- system Basurde for Spanish 389
- system framework Elvira 437
- system in Spanish 421
- systems 365, 429
- telemedicine system 449
- understanding 389
- Dillo 453
- disambiguation
 - word domain 131
 - word sense 131
 - word-sense 41, 107
- discourse 73, 365, 429
 - model 430
 - quality improvement 365
- discriminant analysis 325
- distributed speech recognition 229
- distribution Gaussian 321
- DL ACM 101
- DMOZ 66, 141
- document
 - categorisation 151
 - selection 99
- DRAFTER 34
- DRT 323
- DSO corpus 131
- DSR 229
- DTMF tone detection 414
- Dutch 205, 213, 281
 - Polyphone database 206
 - spoken corpus 277
- dynamic programming 191
- ECGI 393
- EFL Direct 101

- EIS 454
- Elvira 437
- EM 226, 337
- EM algorithm 143, 310
- Emacs 262
- English 19, 41, 57, 109, 111, 139, 197, 341, 358, 397, 413
- entropy
 - cross 182
 - maximum 131
 - normalized 182
- Ergane 61
- error detection in corpus 19
- EuroWordNet 41, 142, 147, 157
- expectation-maximization algorithm 202, 226
- facial
 - animation 299
 - expression 357
- FAR 290
- feature
 - extraction 245, 333
 - extraction technique 325
 - reduction 227
 - selection 224, 227
 - vector 68, 310
 - vectors 208, 289
- feneme-based system 178
- Festival 262
- Festival architecture 261
- FFT 246, 311, 328, 338
- Finish 230
- finite state diagrams 442
- Finnish 413
- Flemish 278, 281
- Fonilex 278
- forward-backward algorithm 277, 280
- forward-backward segmentation 280
- FPR 214
- free phone recognition 214
- French 139, 143, 270, 301, 397, 416
 - BREF80 database 288
 - speech corpus 288
 - speech corpus BREF 270
- frequency signal representation 245
- FRR 290
- FSD 442
- Fukunaga-Koontz 225
- functional generative description 147
- g2p system 278
- Galena 4
- Galician 3
- Gaussian distribution 321
- Gaussian RBF kernel 328
- GCFG 49
- GEMINI 261, 337
- GEMINI project 365
- generalization of bigrams 19
- German 19, 109, 173, 341, 358, 398
 - corpus NEGRA 19
 - orthography 342
 - text-to-speech 177
- Germana 413
- gesture 357
- GhostWriter 34
- Gibbsian CFG 49
- GISE 374
- GIWeb 373
- GNBD 124
- GNU general public license 453
- GoDiS 320
- grammar
 - Nigel 375
 - of Chinese 117
 - polynomial tree substitution 49
 - stochastic context-free 49
 - stochastic regular 389
 - with errors 83
- grammatical inference 389
- Greece 366
- Greek 261, 263, 369, 413
 - speech synthesis 261
- Hacoust sounding function 306
- Hansard corpus 109, 143
- harmonic noise model 269, 273
- Hašek 447
- HDdm parsing 464
- Hidden Markov Model 4, 206
- Hidden Markov Toolkit 205
- hierarchical categories 139
- HMM 4, 116, 173, 189, 205, 215, 221, 245, 279, 307, 321, 343, 383, 389, 416, 456
 - state-clustered 177
 - subphonetic 415
 - triphone 176
- HNM 173, 273
- HNM synthesis 269
- Homer Web browser 454

- HTK 205, 250, 322
- HTK toolkit 205, 250, 321, 333
- HTML 443
- HTML/XML 453
- Hungarian 328
 - sign language 73
- ID3 278
- ILSP/ELEYTHEROTYPIA 369
- InBASE 33, 38
- Infomap 107
- information retrieval 47, 151
 - cross language 139
 - dialogues 437
- information system 33
- information theoretic similarity measure 369
- InQuery 61
- interlingual index 43
- Itakura-Saito measures 340
- Italian 230, 416
- J++ 39
- Japanese 27
- k*-means algorithm 157
- K211d 250
- Kalliope Web portal 454
- Karhunen-Loeve expansion 225
- Katz's discounting 259
- kernel distribution 245
- kernel springy discriminant analysis 326
- kernel support vector machine 285
- keyword spotting 285
- Kittler-Young 225
- KL-ONE 34
- knowledge accumulation 89
- knowledge acquisition 151
- knowledge assimilation 94
- knowledge representation 89
- KPML 34, 38
- KSDA 326
- LAFORIA system 307
- Lagrange functional 286
- Lagrangian 286
- language
 - Arabic 11
 - Basque 397
 - Bulgarian 34
 - Chinese 115
 - Czech 19, 34
 - Dutch 205
 - English 19, 358
 - Flemish 278
 - generation 33
 - German 19, 341, 358
 - Greek 261
 - independent Q-representation 39
 - independent speech processing 269
 - inflected 397, 398
 - Japanese 27
 - model 416
 - Nenets 347
 - Nganasan 347
 - Russian 34, 347
 - Serbian 237
 - Slavic 34, 238
 - Slovenian 329
 - Spanish 123
 - understanding 34
- large vocabulary continuous speech recognition 277
- latent semantic analysis 110
- lattice based speech recognition 301
- LDC 254
- Le Monde 307
- learning
 - instance-based 131
 - with decision tree 165
 - with multilayered perceptron 165
- lemmatization 447
- lexical
 - derivation 147
 - meaning 147
 - parser 123
 - similarity 151
 - stress marks 165
- lexico-syntactic patterns 152
- likelihood distance 213
- LIMSI ARISE 421
- LIMSI base system 307
- Lin's metric 369
- linear interpolation smoothing 201
- Linguistic Data Consortium 254
- linguistic ontology 373
- Link 109
- lip reading 205
- LLR 216
- LM score 416
- LN corpus 257

- LOB corpus 115
- Lochbaum's Rgraph 430
- LP-PSOLA 173
- LPC 270, 299
- LPC synthesis 261, 262, 270
- LPCC 270
- LVCS recognition 331
- LVCSR 258, 277
- M2VTS database 206
- machine translation 47
- MACO+ 422, 423
- MALACH project 57, 253
- maximum entropy 116
- maximum entropy model 131
- maximum likelihood 279
- maximum likelihood estimate 200
- Mbrola 261, 262
- meaning
 - analysis 107
 - of sentence 127
 - opposite 221
 - representation 91
- measure of nonprojectivity 82
- medical documents 100
- MEDLINE 101
- Mel filter 235
- MelBank 299
- MeteoBayes 371
- METEONEWS 366
- metric
 - Lin's 369
 - weighted Jaccard similarity 369
- MFCC 289, 299, 310
- MFCC_0_D_A 322
- MFCC_D_A 313
- MGGI 393
- minimal loss 369
- minimum mean square error estimation 337
- MINIPAR 43
- mixture of Gaussians 337
- MLE 200
- MMSE 337
- model
 - *n*-gram 199, 341
 - belief desire intention 405
 - bigram 197, 446
 - four-gram 185, 330
 - harmonic+noise 173
 - hidden Markov acoustic 245
 - mumble 221
 - phonetically tied-mixture 343
 - probabilistic 381
 - state-clustered tied-mixture 343
 - stochastic 389
 - tri-gram 336
 - triphone acoustic 336
 - triphones 331
- Modern Chinese 115
- monophones 331
- Moore 461
- morpheme prediction 398
- morphological analyzer 422
- morphology 148
- MULTEXT-East 165
- multi-modal
 - access to information systems 413
 - dialogue system 357
 - multilingual
 - access 253
 - access to information systems 413
 - environment 41
 - language generation 33
- Multilingual Access to Large Spoken Archives project 253
- multimodal interfaces 205
- MultiNet 89
- mumble model 221
- mutual information 369
- n*-gram model 201, 259, 341, 450
- n*-gram tagger 20
- natural language analysis 89, 447
- natural language guided dialogue 373
- natural language synthesis 447
- NCC1 310
- negotiation in dialogue 317
- NEGRA corpus 19
- Nenets 347
- Nenets Multimedia Phrase-book 351
- Nganasan 347, 353
- Nganasan Audio Dictionary 350
- Nigel grammar 375
- NIST 207
- noise 337
 - estimation 229
 - reduction 333
- NOISEX-92 database 339
- object domain model 35

- ODM 35
- OHSUMED collection 65
- ontological hierarchies 108
- ontologies 373
- ontology
 - of processes 34
 - of things 34
- orthography 278
- parallel
 - corpus French/English 109
 - language model 418
 - monolingual systems 414
- parser
 - Arabic 11
 - efficiency 465
 - MINIPAR 43
 - PCFG for Classical Chinese 121
 - shallow 422
 - statistical 414
 - SUPP 42
- parsing 11, 49, 414, 461
- part-of-speech tagging 19, 115
- patent corpuses 65
- path distance 213
- PCBF 299
- PCFG 49
- PDT 150
- PDTB 462
- phoneme
 - classes 278
 - model 209, 322
 - recognizer 325
 - segmentation 293
 - set 322
- phoneme-level clustering 173
- phonetic
 - dictionary 180
 - transcription 278
 - transcriptions 277
- phonetically tied-mixture model 343
- phonetization 238
- phonological
 - awareness 325
 - teaching system 325
- phrase
 - boundary 29
 - dependency 27
 - significance 27, 30
- PLP 299, 310
- PLP_D_A 313
- Porter 144
- Porter's suffix removal algorithm 70
- PoS 29, 42, 110, 115, 168, 360, 422, 423
 - tagger 168
 - tagging 3
 - tagging for Chinese 115
- Prague Dependency Treebank 61, 150
- probabilistic
 - context-free grammar 49
 - context-free parsing algorithm 49
 - dialogue modelling 381
- probabilistic parsing techniques 461
- probability
 - a-posteriori 184
- project MALACH 253
- Prolog 42
- pronunciation database 278
- prosodic
 - classification 357
 - rates 363
 - feature vector 357
 - features 361
- prosody 270, 439
- classification 357
- generation 180
- generator Serbian 237
- information 270
- modeling 264, 439
- modelling of Slovene speech 459
- of Nenets 348
- prune threshold 199
- PSOLA 173
- PT 461
- pulse code modulation 262
- Q-representation 34, 39
- quadratic superposition principle 246
- query
 - expansion techniques 139
 - reformulation 139
 - representation 33
- querying system 123
- question answering 47, 131
- question answering systems 89
- radial basis function 285
- RASTA 310
- RASTA-PLP 299
- RBF 290

- real-time continuous speech recognition 189
- recipe graph 430
- recognition
 - error 221
 - error at word-level 181
 - rate 182
 - system 199
- recognizer SPHINX 323
- recursive transition networks 450
- rejection technique 221
- RELAX 423
- retrieval cross-language 57
- Reuters corpus 65
- RFODG 82
- Rgraph 430
- RMR 310
- robust speech recognition 229
- ROC 218
- Rough'n'Ready suite of technologies 343
- rule-based dialogue strategies 381
- Russia 347
- Russian 34, 165
- Russian Federation 347
- salient words 68
- SAM 333
- Samoyedic 353
- SAPI5 design specification 408
- SCFG 49
- Scheme 262
- scoring method 181
- screen reader 459
- searching
 - cross-language 59
 - thesaurus-based 59
- See5 168
- segmental features 268
- segmentation
 - ambiguous 5
 - methods 293
 - of speech 277
- segmentation of speech into phonemes 293
- semantic
 - analyzer 123, 127
 - graph 110
 - networks 89
 - similarity 43, 109, 368
- semantic discrimination 155
- Semcor.LazyBoosting 132
- SENSEVAL-2 132
- sentence
 - compaction 27
 - compression 27
- sentence boundary detection 132
- sentence compression 27, 30
- Serbian 237
- short time Fourier transform 338
- short-time spectral attenuation 337
- signal representation 245
- signal-to-noise ratio 229
- similarity
 - contextual 151
 - functional 151
 - lexical 151
 - matrix 151
 - measure 151
 - semantic 109
- SIRIDUS 317, 320
- SISCO 124
- Slavic languages 329
- Slovene 247, 453
 - dialogue module 453
 - lexicon 165
 - speech synthesis 459
- Slovene speech database 250
- Slovenia 454
- Slovenian 168, 329, 334
 - language 168
 - PoS tagger 168
 - text corpus 334
- SMADA project 213
- SMART 67, 144
- SmartKom 357
- SmartKom project 205
- SNABI 333
- SNABI speech database 331
- SNR 229
- Spanish 3, 41, 123, 230, 373, 384, 398, 416, 423
 - dialogue corpus 421
 - dialogue system Basurde 389
 - language 389
 - lexical parser 123
 - querying system 123
 - railway information dialogue system 421
 - semantic analyzer 123
 - syntax checker 123
 - WordNet 43
- speaker clustering 269
- speaker-independent

- speech processing 269
- speech recognition 189, 221
- spectral magnitude 337
- Spectral subtraction 229
- spectrogram 246
- speech
 - archive 57
 - coding 269
 - corpora 57
 - corpus 177, 237
 - encoding methods 293
 - feature extraction 245
 - processing 445
 - recognition 49, 181, 197, 205, 213, 221, 229, 242, 253, 277, 309, 321, 329, 333, 341, 445
 - continuous 189
 - real-time 189
 - recognition errors 213
 - recognition system Speeral 301
 - recognizer 234
 - retrieval 57
 - segment database 173
 - segmentation 277, 293
 - segmentation methods 277
 - signal representation 245
 - speaker-independent processing 269
 - spectral characteristics 337
 - synthesis 173, 237, 261, 269, 459
 - concatenative 173
 - synthesis corpus-based 265
 - synthesizer Demosthenes 266
 - synthetic sample 179
 - technology applications 405
 - user interface 407
- Speech Interfacing in the Wireless Automotive Messaging Pilot project 405
- speech recognition 285
- SpeechDat 229, 333
- SpeechDat(II) 333
- SpeechDat-E 321
- SpeechVis software 239
- Speeral continuous speech recognition system 301
- SPHINX 323
- SPINE 321, 323
- SPL 38
- splitting of compounds 342
- spoken
 - archives 253
 - corpus 281
- Czech 173, 197
- dialogue 449
- dialogue system 421
- Dutch corpus 277
- German 173
- Springer Link 109
- SQL 128
- SRILM toolkit 259
- SSJČ dictionary 157
- START 33
- state-clustered tied-mixture model 343
- statistical decision making 365
- statistical inference techniques 381
- STE 310
- stemming 139
- STFT 338
- STI 310
- stochastic CFG 49
- STSA 337
- STZCR 310
- SUI 407
- supervised learning 131
- SUPP 42
- support vector machine 285, 328
- Susanne corpus 49, 53
- Švejk 447
- SVM 288
- SWAMP 405, 406
- Swedish 398
- Switchboard 277
- Sylvia-NLQ 124
- synset 42, 147
- syntactic
 - analysis 49, 51
 - derivation 147
 - patterns 151
- syntax
 - analysis 81
 - checker 123
 - recognition 81
- synthesis triphone-based 178
- synthesizer Mbrola 262
- system
 - Alfanum 237
 - conversational 413
 - Elvira 437
- t*-test 136
- TABA 421
- TACAT 422

- tagger
 - relaxation labelling 423
 - rule-based 115
 - statistical 20
 - transformation-based 115
 - trigram-based 20
- tagging
 - PoS 3, 19, 115, 132
 - sense 158
- Taiwan corpus 119
- TD-PSOLA 237
- TEA text analyzer 99
- telemedicine system 449
- telephone dialogue system 384
- telephony system 418
- term
 - clustering 151
 - extraction 151
 - similarity 151
- testing of NLP systems 437
- text
 - analyzer TEA 99
 - categorization 65
 - classification 99
 - documents 99
 - filtering 41, 99
 - summarisation 27
 - unstructured 99
- text-to-speech
 - synthesis 445
 - synthesizer 237
- texts bilingual 107
- TFD 246
- the Netherlands 206, 353
- thesauri 139
- time signal representation 245
- time-frequency distribution 246
- TIMIT 277
- tokenization 3
- toolkit
 - HTK 205, 250
 - SRILM 259
- topic
 - detection 59
 - tracking 59
- topical importance 27
- TRAINs 421
- Transcriber tool 342
- transcription
 - automatic 253
- transcription BN systems 344
- transformation-based tagger 115
- translation term-by-term 139
- TREC 143
- TreeView program 86
- trellis 4
- trigram model 330
- TRINDI 320
- triphone acoustic model 336
- triphones 331, 343
- TTS 173, 237, 261, 277, 407, 414, 445, 453
 - Greek 261
- TTS system 168
- UK English 416
- unification of layer attributes 89
- Upper Model 34
- US English 270, 294, 416
- utterance
 - selection 268
 - verification 213
- UWB_B02 corpus 257
- valency
 - frame 84
 - lexicon of Czech 147
- vector model 108
- vector quantization 269
- vector space model 67
- vector spaces 108
- Verbmobil 184, 363
- Verbmobil appointment-scheduling corpus 317
- Verbmobil database 341
- VHF 253
- ViaVoice 415
- viseme 209
 - class 210
 - model 210
- Visual History Foundation 253
- visualization techniques 107
- visually impaired Web users 453
- Viterbi 277
 - algorithm 3, 4, 116, 191, 279, 306, 394
 - iterative 3
 - one-pass 3
 - algorithm on lattices 4
 - alignment 207
 - decoder 207
 - recognition 270
 - search 189, 191

- Viterbi search 176
Viterbi segmentation 283
Viterbi-I 9
Viterbi-L 4
Viterbi-N 8
VLBR 269
voice chat 445
voice-driven dialogue manager 459
VoiceXML 437
VoiceXML interpreter 441
VQ based speaker clustering 269

WAM 405
WDD 131
Web Access Initiative 453
Web of Science 101
web sites categorization 65
weighted Jaccard similarity metric 369
Wiener filtering 229

Wigener-Ville distribution 246
Witten-Bell discounting 201
Witten-Bell discounting scheme 192
Witten-Bell smoothing technique 194
Wizard of Oz 357, 366, 384, 390, 394, 421
word confidence estimation 181
word decomposition 329
word order complexity 81
word-sense
– classifiers 133
– disambiguation 41, 107, 131, 155
WordNet 41, 131, 142, 155
WSD 107, 131, 155

Yahoo 66, 70, 141

ZDSSS 454
ZER 310
Zhao-Atlas-Marks distribution 245