
Index

- AAR, *see* Adaptive Autoregressive Parameters
- ACC, *see* Anterior Cingulate Cortex
- Accuracy, 327
- Adaptive
 - Autoregressive Parameters, 65
 - Classifiers, 65, 303
- ALS, *see* Amyotrophic Lateral Sclerosis
- Amyotrophic Lateral Sclerosis, 1, 373
- Anterior Cingulate Cortex, 291
- Arm Movement, 161
- Artifact Processing, 347
- Assistive Technology, 111, 129
- Asynchronous
 - BCI, 303, 393
 - Control, 111, 129
 - Protocols, 103
- Auditory Feedback, 44
- Augmentative Communication, 31, 359
- Autoregressive Model, 129

- Bayes' Classifier, 175
- Bayesian Inference, 147
- BCI, *see* Brain-Computer Interface
- BCI2000, 373
- Biofeedback, 1, 373
- Biomedical Signal Processing, 347
- Bipolar Filtering, 207
- Bit Rate, 291
- Blind Source Separation, 235
- Blood Oxygen Level Dependent, 1
- BOLD, *see* Blood Oxygen Level Dependent
- Brain
 - Computer Interface, 1
 - actuated Devices, 103
 - actuated Robots, 103
 - controlled Cursor, 161
 - controlled Robot, 161
 - Game, 103
 - stem stroke, 1
 - Switch, 111

- CAR, *see* Common Average Reference
- Cave, 393
- Cervical Spinal cord injury, 1
- Classification, 85, 207, 347, 393, 409
- CLIS, *see* Completely Locked-in State
- Closed-loop Control, 161
- Cognitive Neural Prostheses, 175
- Common
 - Spatial Patterns, 207
 - Average Reference, 207
 - Spatial Filters, 303
 - Spatial Patterns, 85, 235
- Communication, 44, 373
- Completely Locked-in State, 1, 373
- Complex Bandpower, 65
- Confusion Matrix, 327
- Consciousness, 373
- Cortical Reorganization, 373
- Cross-correlation, 129
- Cross-validation, 175, 347
- CSP, *see* Common Spatial Patterns
- Cue-based BCI, 303
- Cued, 393

- Data Formats, 347
- DBI, *see* Direct Brain Interface
- DDT, *see* Discriminative Dynamic Tracker
- Detection, 409
- Direct Brain Interface, 129
- Discriminative Dynamic Tracker, 191
- Dynamical System, 191

- ECoG, *see* Electrocorticogram
- EEG, *see* Electroencephalography
- Electrocorticogram, 1, 129, 373
- Electroencephalography, 1
- ELFP, *see* Estimated Local Field Potentials
- ERD, *see* Event-related Desynchronization
- ERPs, *see* Event-related Potentials
- Error Rate, 327
- Error-related EEG Potentials, 103, 291
- ErrP, *see* Error-related EEG Potentials
- ERS, *see* Event-related Synchronization
- Estimated Local Field Potentials, 103, 291
- Evaluation, 347
- Event-related
 - Desynchronization, 65, 85, 129, 235, 359, 373
 - Potentials, 1, 31, 129, 373
 - Synchronization, 65, 129
- Eye Blinks, 291
- FastICA, 207
- Feature
 - Combination, 207
 - Extraction, 175, 207
 - Selection, 235, 279
- Feedback, 1, 44, 85, 291, 359, 393
- Finite Impulse Response, 207
- FIR, *see* Finite Impulse Response
- Fisher
 - Discriminant Analysis, 207
 - Score, 207
- FMRI, *see* Functional Magnetic Resonance Imaging
- FNIRS, *see* Functional Near Infrared Spectroscopy
- Functional Electrical Stimulation, 161
- Functional Magnetic Resonance Imaging, 1
- Functional Near Infrared Spectroscopy, 1
- Gaussian Classifier, 303
- Gaze Shifts, 291
- GNU General Public License, 347
- Gram Matrix, 191
- Hand Movements, 191
- Head Mounted Display, 393
- HMD, *see* Head Mounted Display
- HMI, *see* Human-Machine Interface
- Human-Machine Interface, 1
- ICA, *see* Independent Component Analysis
- IFT, *see* Inverse Fourier Transformation
- IIR, *see* Infinite Impulse Response
- Image Triaging, 423
- Imagined Movements, 235, 261
- Independent Component Analysis, 207, 235
- Infinite Impulse Response, 207
- Infomax, 207
- Information Transfer Rate, 85, 327
- Intentional Control, 111
- Intertask Variability, 65
- Intracortical, 1
- Intracortical Microelectrodes, 161, 373
- Intracranial Electroencephalography, 175
- Invasive, 1
- Invasive BCI, 373
- Inverse Fourier Transformation, 207
- Inverse Solutions, 279
- ITV, *see* Intertask Variability
- JADE, 207
- Kalman Filter, 147, 191
- Kappa Coefficient, 327
- Kernel, 191, 207
- Kernel PCA, 207
- Kinesthetic Motor Imagery, 65
- kPCA, *see* Kernel PCA
- Laplace, 207
- LDA, *see* Linear Discriminant Analysis
- Least Square Regression, 207
- Leave-one-out Validation, 207, 347
- Likelihood Ratio, 129

- Linear
 - Discriminant Analysis, 175, 207, 261, 303
 - Discrimination, 423
 - Programming Machine, 207
- Linux, 347
- LIS, *see* Locked-in State
- Local Field Potentials, 175, 279
- Locked-in, 373
 - State, 1, 373
 - Syndrome, 1
- LPM, *see* Linear Programming Machine
- LSR, *see* Least Square Regression

- Macaque, 161
- Machine Learning, 1, 85, 103, 207, 235
- Magnetoencephalogram, 1, 373
- Margin, 207
- Matlab, 347, 359
- MEG, *see* Magnetoencephalogram
- Memory Reach Task, 175
- Mental Tasks, 261
- Model Selection, 207
- Motor
 - Control, 161
 - Cortex, 147, 161
 - Imagery, 65, 235, 393
- Mu Rhythm, 31, 44
- Multiclass Paradigm, 103
- Multielectrode Arrays, 1
- Mutual
 - Information, 175, 327
 - Learning Process, 103

- Navigation, 393
- Neural
 - Activity, 191
 - Cursor, 1
 - Decoding, 147, 175
 - Prosthesis, 147
- Neurometric Function, 423
- Neurophysiologic Recordings, 175
- Neuroprosthesis, 65, 111, 161, 373
- Neutral Cue, 393
- No Control, 111
- Non-stationary Signals, 303
- Noninvasive, 1
 - BCI, 373
 - Neuroprosthesis, 279
- Numerical Optimization, 175

- Octave, 347
- Ocular Artifacts, 291
- Oddball, 373
 - N200 & P300, 291
 - Paradigm, 1
- Online, 393
 - Adaptation, 303
 - Learning, 103
- Open Source Software, 347
- Operant Conditioning, 1, 373
- Outlier, 207
- Overfitting, 235

- P300, 1, 31, 373
 - ERP, 359
 - Evoked Potential, 359
 - Speller, 359
- Parietal Reach Region, 175
- Pattern Recognition, 111
- PCA, *see* Principal Component Analysis
- Perceptual Decision Making, 423
- PET, *see* Positron Emission Tomography
- Phantom Movements, 85
- Phase Locking Value, 65
- Polynomial Kernel, 207
- Positron Emission Tomography, 1
- Principal Component Analysis, 207, 261
- PROB, 207
- Psychometric Function, 423

- QDA, *see* Quadratic Discriminant Analysis
- Quadratic Discriminant Analysis, 207

- Rapid Serial Visual Presentation, 423
- RBF Kernel, 207
- RDA, *see* Regularized Discriminant Analysis

- Reaction Time Variability, 423
- Readiness Potential, 85
- Real-time, 409, 423
 - Analysis, 393
 - Signal Processing, 359
- Receiver Operator Characteristic Analysis, 423
- Regularization, 207
- Regularized
 - Discriminant Analysis, 207
 - Linear Discriminant Analysis, 207
- Rehabilitation, 31
- Rejection Criteria, 103
- RLDA, *see* Regularized Linear Discriminant Analysis
- Robot, 161
- Robustification, 207
- ROC, *see* Receiver Operator Characteristic Analysis
- RP, *see* Readiness Potential
- RSVP, *see* Rapid Serial Visual Presentation

- Sammon Mapping, 261
- SCP, *see* Slow Cortical Potentials, 44, *see* Slow Cortical Potentials
- Screening, 235
- Self-paced, 129
 - Control, 111
- Self-regulation, 44
- Self-tapping, 279
- Sensitivity, 327
- Sensorimotor
 - Cortex, 31
 - Rhythms, 1, 235, 359, 373
- SEPAGAUS, 207
- Short Time Fourier Transformation, 207
- Short-time PCA, 261
- Signal Processing, 207
- Simulink, 347
- Single-Trial
 - Analysis, 85
 - Classification, 291
- Slow Cortical Potentials, 1, 44, 359, 373

- SMR, *see* Sensorimotor Rhythms
- SOBI, 207
- Sonification, 44
- Spatial Filtering, 103, 235
- Specificity, 327
- Spelling Interface, 44
- Spikernel, 191
- Spinal Cord Injury, 111
- Spontaneous Brain Activity, 103
- SSEP, *see* Steady-State Evoked Potentials
- SSSEP, *see* Steady-state Somatosensory Evoked Potential
- SSVEP, *see* Steady-state Visual Evoked Potential
- Statistical
 - Classifier, 279
 - Gaussian Classifier, 103
 - Signal Processing, 111
- Steady-state
 - Evoked Potentials, 1
 - Somatosensory Evoked Potential, 1, 65
 - Visual Evoked Potential, 1, 65
- STFT, *see* Short Time Fourier Transformation
- Stimulation Experiments, 359
- Stroke, 373
- Support Vector
 - Machines, 175, 207, 235
 - Regression, 191
- SVM, *see* Support Vector Machines
- Synchronous
 - BCI, 393
 - Control, 111

- TDSEP, 207
- Telemonitoring, 373
- Thought-Translation-Device, 44
- Time-delay Embedding, 261
- Time-varying Spectrum, 129
- Tracking, 191
- Training, 393
- TTD, *see* Thought-Translation-Device

- Uncued, 393
- Validation, 207
- VE, *see* Virtual Environments
- Virtual
 - Environments, 393
 - Keyboard, 65, 103
 - Reality, 65, 161, 393
- Visual
 - Discrimination, 423
 - Motor Imagery, 65
 - Processing, 423
- VR, *see* Virtual Reality
- Walking, 393
- Workload, 409