

# IEEE TRANSACTIONS ON NEURAL SYSTEMS AND REHABILITATION ENGINEERING

A PUBLICATION OF THE IEEE ENGINEERING IN MEDICINE AND BIOLOGY SOCIETY

The IEEE gratefully recognizes the technical co-sponsorship of RESNA and IFESS in the marketing and editing of this Transactions.



Indexed in the National Library of Medicine, PubMed®, and MEDLINE®



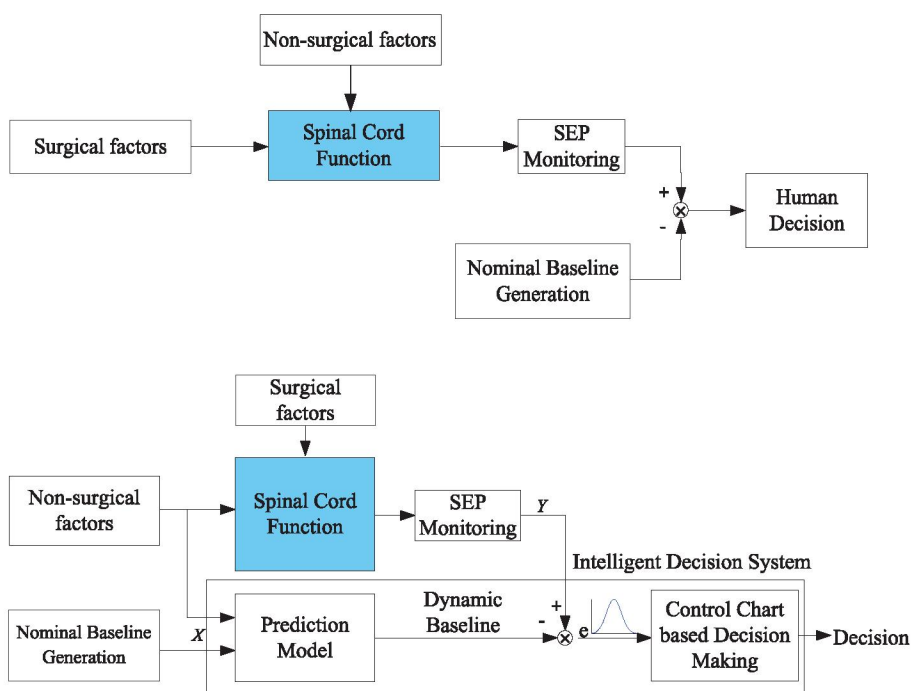
FEBRUARY 2016

VOLUME 24

NUMBER 2

ITNSB3

(ISSN 1534-4320)



Human-assisted SEP monitoring (top) and intelligent decision system for SEP monitoring (bottom), as described in the paper “An Intelligent Decision System for Intraoperative Somatosensory Evoked Potential Monitoring,” by B. Fan, H.-X. Li, and Y. Hu , on p.300.

# IEEE TRANSACTIONS ON NEURAL SYSTEMS AND REHABILITATION ENGINEERING

FEBRUARY 2016

VOLUME 24

NUMBER 2

ITNSB3

(ISSN 1534-4320)

---

## *Neural Engineering*

- Regularized Filters for L1-Norm-Based Common Spatial Patterns ..... *H. Wang and X. Li* 201
- A Perturbation Based Decomposition of Compound-Evoked Potentials for Characterization of Nerve Fiber Size Distributions ..... *R. B. Szlavik* 212

## *Rehabilitation Engineering*

- A Classification Method for User-Independent Intent Recognition for Transfemoral Amputees Using Powered Lower Limb Prostheses ..... *A. J. Young and L. J. Hargrove* 217
- Detection of and Compensation for EMG Disturbances for Powered Lower Limb Prosthesis Control ..... *J. A. Spanias, E. J. Perreault, and L. J. Hargrove* 226
- Using Functional Electrical Stimulation Mediated by Iterative Learning Control and Robotics to Improve Arm Movement for People With Multiple Sclerosis ..... *P. Sampson, C. Freeman, S. Coote, S. Demain, P. Feys, K. Meadmore, and A.-M. Hughes* 235
- Upper Body-Based Power Wheelchair Control Interface for Individuals With Tetraplegia ..... *E. B. Thorp, F. Abdollahi, D. Chen, A. Farshchiansadegh, M.-H. Lee, J. P. Pedersen, C. Pierella, E. J. Roth, I. Seáñez Gonzáles, and F. A. Mussa-Ivaldi* 249

## *Neural and Rehabilitation Interface*

- Single-Trial Analysis of Inter-Beat Interval Perturbations Accompanying Single-Switch Scanning: Case Series of Three Children With Severe Spastic Quadriplegic Cerebral Palsy ..... *B. Leung and T. Chau* 261
- Inference and Decoding of Motor Cortex Low-Dimensional Dynamics via Latent State-Space Models ..... *M. Aghagolzadeh and W. Truccolo* 272
- Event-Related Beta EEG Changes During Active, Passive Movement and Functional Electrical Stimulation of the Lower Limb ..... *S. Qiu, W. Yi, J. Xu, H. Qi, J. Du, C. Wang, F. He, and D. Ming* 283
- Analysis of Gait Rhythm Fluctuations for Neurodegenerative Diseases by Phase Synchronization and Conditional Entropy ..... *P. Ren, W. Zhao, Z. Zhao, M. L. Bringas-Vega, P. A. Valdes-Sosa, and K. M. Kendrick* 291
- An Intelligent Decision System for Intraoperative Somatosensory Evoked Potential Monitoring ..... *B. Fan, H.-X. Li, and Y. Hu* 300

---

## ANNOUNCEMENT

- 38th Annual International Conference of the IEEE Engineering in Medicine and Biology Society ..... 308
-