2014 IEEE Symposium on Computational Intelligence in Brain Computer Interfaces

(CIBCI 2014)

Orlando, Florida, USA
9 – 12 December 2014
# TABLE OF CONTENTS

IEEE SSCI 2014 General Committee ........................................................................................................ iv
IEEE CIBCI 2014 Committee ...................................................................................................................... v

Friday, December 12

9:30AM-10:30AM

**CIBCI’14 Session 1**
Chair: Damien Coyle and Robert Kozma

9:30AM  **Development of an Autonomous BCI Wheelchair** ................................................................. 1
Danny Wee-Kiat Ng, Ying-Wei Soh and Sing-Yau Goh

9:50AM  **Across-subject estimation of 3-back task performance using EEG signals** ...................... 5
Jinsoo Kim, Min-Ki Kim, Christian Wallraven and Sung-Phil Kim

10:10AM  **Abnormal Event Detection in EEG Imaging - Comparing Predictive and Model-based Approaches** ..............................................................................................................10
Jayanta Dutta, Banerjee Bonny, Ilin Roman and Kozma Robert

11:00AM-12:00PM

**CIBCI’14 Session 2**
Chair: Robert Kozma and Kai Keng Ang

11:00AM  **Sensitivity Analysis of Hilbert Transform with Band-Pass FIR Filters for Robust Brain Computer Interface** .......................................................................................................16
Jeffery Davis and Kozma Robert

11:20AM  **Electroencephalographic Method Using Fast Fourier Transform Overlap Processing for Recognition of Right- or Left-handed Elbow Flexion Motor Imagery** ..................24
Tomoyuki Hiroyasu, Yuuki Ohkubo and Utako Yamamoto

11:40AM  **Development of SSVEP-based BCI using Common Frequency Pattern to Enhance System Performance** ..............................................................................................................30
Li-Wei Ko, Shih-Chuan Lin, Wei-Gang Liang, Oleksii Komarov and Meng-Shue Song

1:30PM-3:10PM

**CIBCI’14 Session 3**
Chair: Kai Keng Ang and Damien Coyle

1:30PM  **EEG-based Golf Putt Outcome Prediction Using Support Vector Machine** .......................36
Qing Guo, Jingxian Wu and Baohua Li

1:50PM  **Non-supervised Technique to Adapt Spatial Filters for ECoG Data Analysis** .................43
Emmanuel Morales-Flores, Gerwin Schalk and J.Manuel Ramirez-Cortes

2:10PM  **Identification of Three Mental States Using a Motor Imagery Based Brain Machine Interface** ....................................................................................................................49
Trongmun Jiralerspong, Chao Liu and Jun Ishikawa

2:30PM  **EEG Subspace Analysis and Classification Using Principal Angles for Brain-Computer Interfaces** ....................................................................................................................57
Rehab Ashari and Charles Anderson

**AUTHOR INDEX** .........................................................................................................................................64