

Proceedings

**International Conference
on Biocomputation, Bioinformatics,
and Biomedical Technologies
BIOTECHNO 2008**

**29 June - 5 July 2008
Bucharest, Romania**



**Los Alamitos, California
Washington • Tokyo**



International Conference on Biocomputation, Bioinformatics, and Biomedical Technologies

BIOTECHNO 2008

Table of Contents

Preface.....viii

Committees.....ix

Biotech 1: Biocomputing I

In-bed Patients Behaviour Monitoring System1

P. Bustamante, N. Guarretxena, G. Solas, and U. Bilbao

A Data Fusion Approach in Protein Homology Detection7

Aydin Can Polatkan, Hasan Ogul, and Hayri Sever

Identifying Disease Susceptible DNA Regions Using Underlying Odds Ratio
Contour Analysis13

Santitham Prom-on, Jonathan Chan, Asawin Meechai,

Wallaya Jongjaroenprasert, and Boonsong Ongphiphadhanakul

Fister-Panetta Upper Bound for Cancer Growth. Some Computational
Remarks17

Răzvan Bocu, Sabin Tabirca, and Yin Jie Chen

Failure Prediction Mechanisms in Cluster Systems23

Mohsen Sharifi and Seyed Ali Hamed

Biotech 2: Biocomputing II

Directional Invariance of Co-occurrence Matrices within the Liver	29
<i>Carl Philips, Daniel Li, Daniela Raicu, and Jacob Furst</i>	
'Blast Those Sequences': A Gridified Framework for Bioinformatics Blast Using the A3pviGrid	35
<i>Avinash Shankaranarayanan, Christine Amaldas, and Russel Pears</i>	
A New Modeling for Finding Optimal Weighted Distances	41
<i>Yam Ki Cheung, Ovidiu Daescu, and Anastasia Kurdia</i>	
Effects of Improper Spectral Delay on Speech Recognition with Cochlear Implants: A Simulation Study	47
<i>Tamás Harczos, András Kátai, Frank Klefenz, and Izet Baljić</i>	

Biotech 3: Chemoinformatics

In Silico Drug Screening Based on a Protein-Compound Affinity Matrix	53
<i>Yoshifumi Fukunishi</i>	
TVscreen: Trend Vector Virtual SCREENING of Large Commercial Compounds Collections	59
<i>Dariusz Plewczynski</i>	
MMsINC®: A New Public Large-Scale Chemoinformatics Database System	64
<i>M. Fanton, M. Floris, G. Frau, M. Sturlese, J. Masciocchi, P. Palla, F. Cedrati, P. Rodriguez-Tomé, and S. Moro</i>	
Concept of Associated Photodynamic Therapy with Porphyrin – Cis-Platin Drug System and Applications on HeLa Cells	70
<i>Rodica-Mariana Ion, Luciana Maresca, Danilo Migoni, and Francesco P. Fanizzi</i>	
New Chessboard (8×8) Representation of the Standard Genetic Code, and Its Application for Representing Primary Structures of Proteins	76
<i>Alexandru T. Balaban and Milan Randić</i>	

Biotech 4: Biocomputing III

Combining Boundaries and Ratings from Multiple Observers for Predicting Lung Nodule Characteristics	82
<i>Ekarin Varutbangkul, Vesna Mitrovic, Daniela Raicu, and Jacob Furst</i>	
Network P2P for Exploring and Visualization of Proteomic Data: Possibility of Handling Data and Analysing Them under Different Perspectives	88
<i>G. Mercurio, S. Maglio, A. Agrusti, G. De Nunzio, R. Cataldo, I. De Mitri, M. Favetta, A. Massafra, G. Marsella, D. Vergara, M. Maffia, A. Vasileanu, and L. D. Serbanati</i>	
sBGMM: A Stratified Beta-Gaussian Mixture Model for Clustering Genes with Multiple Data Sources	94
<i>Xiaofeng Dai, Harri Lähdesmäki, and Olli Yli-Harja</i>	
Mathematical Description of Biological Structures and Mechanisms	100
<i>H. Joel Jeffrey</i>	

Biotech 5: Biomechanical Devices

Microdevice for Isolating Viable Circulating Tumor Cells	109
<i>Swee Jin Tan, Levent Yobas, Gabriel Yew Hoe Lee, Choon Nam Ong, and Chwee Teck Lim</i>	
Biosensing Based on Surface Plasmon Resonance of Gold Nanohole and Nanoring Arrays Fabricated by a Novel Nanosphere Lithography Technique	114
<i>Farah Fida, Ramin Banan-Sadeghian, Ahmad-Reza Hajiaboli, Yahia Djaoued, Simona Badilescu, Subramanian Balaji, M. Kahrizi, and Vo-Van Truong</i>	
Particle Transfer and Detection in a Microspheres Based Detoxification System	120
<i>M. Brandl, J. Hartmann, T. Posnicek, and D. Falkenhagen</i>	
UUTE Home Network for Wireless Health Monitoring	125
<i>Sakari Junnila, Irek Defee, Mari Zakrzewski, Antti-Matti Vainio, and Jukka Vanhala</i>	

Biotech 6: Bioinformatics I

RN-Cluster: Discovering Coherent Biclusters Which is Robust to Noise	131
<i>Jaegyeon Ahn, Youngmi Yoon, and Sanghyun Park</i>	
Design of Microarray Probes for Detection of Mutations	137
<i>Pedro Almeida, Laura Carreto, and José Luís Oliveira</i>	
Next-Generation Collaboration Environments for Interactive Tele-medical Consultation	143
<i>Kyungtae Kong, Namgon Kim, Sangwoo Han, and JongWon Kim</i>	
Towards Better Outliers Detection for Gene Expression Datasets	149
<i>R. Kashef and M. S. Kamel</i>	
Exploiting Codon-Triplets Association for Genome Primary Structure Analysis	155
<i>José P. Lousado, Gabriela R. Moura, Manuel A. S. Santos, and José Luis Oliveira</i>	

Biotech 7: Bioinformatics II

Studying the Evolution of Codon Context in Conserved Gene Sequences	159
<i>Miguel Pinheiro, José L. Oliveira, Gabriela R. Moura, and Manuel A. S. Santos</i>	
Grouping Levels of Exposure with Same Observable Effects before Class Prediction in Toxicogenomics	164
<i>Vincent Guillemot, Cathy Philippe, Arthur Tenenhaus, Jérôme Rollin, Xavier Gidrol, and Vincent Frouin</i>	
A Microarray Information Database	170
<i>Joel P. Arrais, Laura Carreto, Manuel A. Santos, and José L. Oliveira</i>	
Analyzing Multivariate Calibration Techniques for Glucose Level Prediction in Non-invasive Human Tongue Spectra	176
<i>S. R. Naqvi, M. Saeed, and N. Azeemi</i>	

Author Index	183
---------------------------	-----