2017 IEEE Conference on Computational Intelligence in Bioinformatics and Computational Biology

Wednesday, August 23

10:00AM-10:30AM  
Coffee and Tea Break  
Room: Conference Reception Area

10:30AM-11:15AM  
Tutorial: Wendy Ashlock - An introduction to CRISPR Bioinformatics  
Room: The Chadwick Suite A

11:15AM-12:00PM  
Tutorial: Michael Emmerich, Irina Yevseyeva - Multicriteria decision analysis and optimization for computational chemistry and drug discovery  
Room: The Chadwick Suite A

12:00AM-1:00PM  
Lunch Break  
Room: Hotel restaurant

1:00PM-2:00PM  
Plenary Talk: Keynote, Speaker: Douglas Kell  
Room: The Chadwick Suite A

Elements of computational intelligence and their applications in bio(techno)logy

2:00PM-2:30PM  
Coffee and Tea Break  
Room: Conference Reception Area

2:30PM-4:00PM:  
Machine Learning in Medical Diagnosis and Prognosis I  
Room: The Chadwick Suite A

Multi-objective evolution of artificial neural networks in multi-class medical diagnosis problems with class imbalance [#55]  
Alex Shenfield and Shahin Rostami

A novel hybrid differential evolution strategy applied to classifier design for mortality prediction in adult critical care admissions [#41]  
Alex Shenfield, Marcos Rodrigues, Hossam Nooreldeen and Jeronimo Moreno-Cuesta
Attention Estimation System via Smart Glasses [#79]
Oscal T.-C. Chen, Pin-Chih Chen and Yi-Ting Tsai

Applying brain emotional learning based fuzzy inference system for EEG signal classification between schizophrenics and control participant [#6]
Bahar Javadi Khasraghi, Saeed Setayeshi, and Greg Price

Hybrid Feature Selection Method for Autism Spectrum Disorder SNPs [#18]
Raid Alzubi, Naeem Ramzan and Hadeel Alzoubi

4:00PM-4:30PM
Coffee and Tea Break
Room: Conference Reception Area

4:30PM-6:00PM:  Digital Signal Processing for Genomics and Metagenomic Sequence Analysis
Room: The Chadwick Suite A

Marginalised Stack Denoising Autoencoders for Metagenomic Data Binning [#54]
Samaneh Kouchaki, Santosh Tirunagari, Avraam Tapinos and David L Robertson

The Identification of Replication Origin in Bacterial Genomes By Cumulated Phase Signal [#70]
Denisa Maderankova, Karel Sedlar, Helena Skutkova and Martin Vitek

De novo assembly of nucleotide sequences in a compress feature space [#60]
Avraam Tapinos and David Robertson

Binning metagenomic reads with probabilistic sequence signatures based on spaced seeds [#33]
Samuele Girotto, Matteo Comin and Cinzia Pizzi

Using Benford's Law to Detect Anomalies in Electroencephalogram: An Application to Detecting Alzheimer's Disease [#45]
Santosh Tirunagari, Daniel Abasolo, Aamo Iorliam, Anthony Ts Ho and Norman Poh

6:30PM-7:00PM
Poster Snapshot Session
Room: The Chadwick Suite A

Reference-free compression of next-generation sequencing data in FASTQ format [#2]
Li Tan and Jifeng Sun

microRPM: a system for novel microRNA prediction [#10]
Chiang-Hsieh Yi-Fan and Wen-Chi Chang

Towards Accurate De Novo Assembly for Genomes with Repeats [#28]
Doina Bucur
Positome: A Method for Improving Protein-Protein Interaction Quality and Prediction Accuracy [#42]
Kevin Dick, Frank Dehne, Ashkan Golshani and James Green

Disease outbreak prediction by data integration and multi-task learning [#53]
Batuhan Bardak and Mehmet Tan

An Automated Approach to Translate Bio-pathways from ODEs into Graphical Hybrid Functional Petri Nets [#67]
Imene Mecheter, Rachid Hadjidj, and Sebti Foufou

Towards integrating large-scale OMICS data to better understand disease pathogenesis [#85]
Mohamed Hamed

Consensus rank orderings of molecular fingerprints [#88]
Douglas Kell and Steve O'Hagan

Number of single-cell Clusters Estimation (NICE): a robust and priori knowledge independent algorithm for single-cell RNA-seq data analysis [#89]
Xin Zou, Jie Hao and Ze-Guang Han

Use of pattern recognition methods for fungal adenylation domain substrate specificity predictions [#93]
Sagar Gore and Ekaterina Shelest

A Copy Number Variation Map of the Korean Population [#94]
Jinhwa Kong, Jaemoon Shin, Jeehee Yoon and Keonbae Lee

Integrative Network-based multi-OMICs Analysis of Glioblastoma Multiforme [#95]
Vasanthi Priyadarshini Gaddi and Lars Kaderali

In Silico Design and Molecular Dynamics Simulation of Glycophorin A Transmembrane Dimer, in Pure DPPC and Mixed DPPC-DMPC Phospholipid [#99]
Delara Mohammad-Aghaie and Fatemeh Razavi

Association Rule Mining of Protein Contact Maps from Protein 3D structures [#100]
Suvarna Vani Koneru and Praveen Kumar Kolli

7:00PM-9:00PM
Opening Reception/Poster Presentations
Room: The Chadwick Suite B

Thursday, August 24
8:30AM-10:00AM: General Session
Room: The Chadwick Suite A

Generating the Logicome from Microarray Data [#39]
Charmi Panchal and Vladimir Rogojin

An Algebraic Generalization for Graph and Tensor-Based Neural Networks [#46]
Ethan Jackson, James Hughes, Mark Daley and Michael Winter

A Note On Population Size Inspired By The Extinction Of Mammoths [#12]
Daniel Ashlock and Wendy Ashlock

Evaluation of the Salmon Algorithm [#84]
John Orth, Sheridan Houghten and Lindsey Tulloch

Hybridization and Ring Optimization for Larger Sets of Embeddable Biomarkers [#26]
Daniel Ashlock and Sheridan Houghten

10:00AM-10:30AM
Coffee and Tea Break
Room: Conference Reception Area

10:30AM-12:00PM: General Session
Room: The Chadwick Suite A

Improving De novo Protein Structure Prediction using Contact Maps Information [#30]
Karina B. Santos, Gregório K. Rocha, Fábio L. Custódio, Helio J. C. Barbosa and Laurent E. Dardenne

Topological, Functional, and Structural Analyses of Protein-protein Interaction Networks of Breast Cancer Lung and Brain Metastasis [#34]
Farideh Halakou, Emel Sen Kilic, Ozlem Keskin and Attila Gursoy

Comparative Analysis on Modularization of Metabolic Network of Methanogens Based on Simulated Annealing Algorithm [#38]
Jing Chen and Lijun Ren

Optimizing Bioengineered Vascular Systems: A Genetic Algorithm Approach [#74]
Sima Mehri, Curtis Larsen, Gregory Podgorski and Nicholas Flann

Reboot Strategies in Particle Swarm Optimization and their Impact on Parameter Estimation of Biochemical Systems [#52]
Simone Spolaor, Andrea Tangherloni, Leonardo Rundo, Marco Salvatore Nobile and Paolo Cazzaniga

12:00PM-1:00PM
Lunch Break
Room: Hotel restaurant

1:00PM-2:00PM
Plenary Talk: Keynote
Room: The Chadwick Suite A, Speaker: Charlotte Dean

Improving fragment assembly protein structure prediction

2:00PM-2:30PM
Coffee and Tea Break
Room: Conference Reception Area

2:30PM-4:00PM: Multi-objective Optimization in Computational Biology and Bioinformatics
Room: The Chadwick Suite A

Modeling Protein Structural Transitions as a Multi-objective Optimization Problem [#31]
Emmanuel Sapin, Kenneth De Jong and Amarda Shehu

Using an Aggregation Tree to Arrange Energy Function Terms for Protein Structure Prediction [#27]
Gregório K. Rocha, Jaqueline S. Angelo, Karina B. Santos, Fábio L. Custódio, Laurent E. Dardenne and Helio J.C. Barbosa

Finding optimal finite biological sequences over finite alphabets: the OptiFin toolbox [#58]
Régis Garnier, Christophe Guyeux and Stéphane Chrétien

Predicting Radiation Protection and Toxicity of p53 Targeting Radioprotectors using Machine Learning [#37]
Masataka Kimura, Shin Aoki and Hayato Ohwada

CVis — towards a novel visualization tool to explore the relationship between input and output partitions in multi-objective clustering ensembles [#83]
Katti Faceli, Tiemi C. Sakata and Julia Handl

4:00PM-4:30PM
Coffee and Tea Break
Room: Conference Reception Area

4:30PM-5:42PM: General Session
Room: The Chadwick Suite A

Inferring bistable lac operon Boolean regulatory networks using evolutionary computation [#25]
Gonzalo A. Ruz, Daniel Ashlock, Thomas Ledger and Eric Goles
A Novel Representation for Boolean Networks Designed to Enhance Heritability and Scalability. [#24]
Daniel Ashlock and Gonzalo A. Ruz

Inference of Genetic Networks from Time-series of Gene Expression Levels Using Random Forests [#11]
Shuhei Kimura, Masato Tokuhisa and Mariko Okada-Hatakeyama

Single-Objective and Multi-Objective Genetic Algorithms for Compression of Biological Networks [#78]
Tyler K. Collins, Adel Zakirov, Joseph Alexander Brown and Sheridan Houghten

6:30PM-10:00PM
Conference Dinner
Location: Manchester Museum
Drink reception from 6.30pm with food being served at 7pm

Friday, August 25

8:30AM-10:00AM: Machine Learning in Medical Diagnosis and Prognosis II
Room: The Chadwick Suite A

Deep Learning Models for Bone Suppression in Chest Radiographs [#40]
Maxim Gusarev, Ramil Kuleev, Adil Khan, Adin Ramirez Rivera and Asad Masood Khattak

Large Residual Multiple View 3D CNN for False Positive Reduction in Pulmonary Nodule Detection [#48]
Anton Dobrenkii, Ramil Kuleev, Adil Khan, Adin Ramirez Rivera and Asad Masood Khattak

A Multivariate Feature Selection Framework for High Dimensional Biomedical Data Classification [#20]
Abeer Alzubaidi and Georgina Cosma

A Multi-stage Approach to Detect Gene-gene Interactions Associated with Multiple Correlated Phenotypes [#75]
Xiangdong Zhou, Keith Chan and Danhong Zhu

Evaluation of Support Vector Machines and Random Forest Classifiers in a Real-time Fetal monitoring system based on cardiotocography data [#43]
Vinayaka Nagendra Harikishan Gude Divya Sampath, Steven Corns and Suzanna Long

10:00AM-10:30AM
Coffee and Tea Break
Room: Conference Reception Area
10:30AM-12:00PM: Computational Intelligence for Biological Feature Induction
Room: The Chadwick Suite A

Infinite String Block Matching Features for DNA Classification [#23]
Daniel Ashlock, Sierra Gillis and Wendy Ashlock

Microbial Abundance Analysis and Phylogenetic Adoption in Functional Metagenomics [#61]
Jyotsna Talreja Wassan, Haiying Wang, Huiru Zheng and Fiona Browne

Modelling Intracranial Pressure with Noninvasive Physiologic Measures [#16]
James Hughes, Ethan Jackson and Mark Daley

Structural and parametric uncertainties in full Bayesian and graphical lasso based approaches: beyond edge weights in psychological networks [#82]
Gabor Hullam, Gabriella Juhasz, Bill Deakin and Peter Antal

Finding Sub-Graphs from Contact Map Overlap Problem [#32]
Suvarna Vani Koneru, Praveen Kumar Kollu and Vedasri Movva

12:00PM-1:00PM
Lunch Break
Room: Hotel restaurant

1:00PM-2:00PM
Plenary Talk: Keynote
Room: The Chadwick Suite A, Speaker: Julia Handl

Multi-objective optimization in bioinformatics and computational biology

2:00PM-2:30PM
Coffee and Tea Break
Room: Conference Reception Area

2:30PM-4:00PM: General Session
Room: The Chadwick Suite A

Data-Driven Longitudinal Modeling and Prediction of Symptom Dynamics in Major Depressive Disorder: Integrating Factor Graphs and Learning Methods [#68]

Leveraging data mining techniques to understand drivers of obesity [#1]
A hierarchical model to predict the probability of germination of bacterial spores [69]
Paola Lecca, Angela Re, Gary Barker and Adaoha Ihewaba

Statistical Report on the 2017 IEEE Conference on Computational Intelligence in Bioinformatics and Computational Biology, Best Paper Award, and Best Poster Award

Wendy Ashlock

An Invitation to the 2018 IEEE Conference on Computational Intelligence in Bioinformatics and Computational Biology

Steven Corns

4:00PM-4:30PM
Coffee and Tea Break

Room: Conference Reception Area