



## **2019 International Workshop on Health Intelligence (W3PHIAI 2019)**

***Sunday, January 27<sup>th</sup> and Monday, January 28<sup>th</sup> 2019***

Location: Nautilus 2, sixth floor of the Kalia Conference Center of the conference hotel.

### **Workshop Programme:**

#### **Sunday January 27<sup>th</sup>**

##### **8:30am - 8:40am**

Opening Remarks (Martin Michalowski & Arash Shaban-Nejad)

##### **8:40am - 9:30am**

Keynote Speaker: Barry O'Sullivan, PhD (University College Cork)

*Title: Case Studies in Improving Healthcare Delivery*

##### **9:30am - 10:30am (20 minutes per paper)**

#### **Session 1: Machine Learning and NLP (Session Chair: Arash Shaban-Nejad)**

1. Assessment of Word Embedding Techniques for Identification of Personal Experience Tweets Pertaining to Medication Uses  
*Keyuan Jiang, Shichao Feng, Ricardo Calix and Gordon Bernard*
2. Dynamic Transfer Learning for Named Entity Recognition  
*Parminder Bhatia and Kristjan Arumae*
3. Automatic Exercise Recognition with Machine Learning (Invited talk)  
*Victor Mendiola, Abnob Doss, Will Adams, Jose Ramos, Matthew Bruns, Josh Cherian, Puneet Kohli, Daniel Goldberg, Tracy Hammond*

##### **10:30am - 11:00am**

Coffee Break

**11:00am - 12:00pm (20 minutes per paper)**

Session 2: Prediction (Session Chair: David Buckeridge)

1. Autism Spectrum Disorder's Severity Prediction Model Using Utterance Features for Automatic Diagnosis Support  
*Masahito Sakishita, Chihiro Ogawa, Kenji J. Tsuchiya, Toshiki Iwabuchi, Taishiro Kishimoto and Yoshinobu Kano*
2. Explaining Multi-Label Black Box Classifiers for Health Applications  
*Cecilia Panigutti, Riccardo Guidotti, Anna Monreale and Dino Pedreschi*
3. Using Machine Learning for Automatic Counting of Lipid-rich Tuberculosis Cells in Fluorescence Microscopy Images  
*Daniel Vente, Ognjen Arandjelovic, Vincent Baron, Evelin Dombay and Stephen Gillespie*

**12:00pm - 1:40pm**

Lunch (on your own)

**1:40 pm - 2:35 pm**

Poster Session

1. A Dynamic Learning Model of Users' Unobserved Mind States for Healthcare Management Using Mobile Apps  
*Amy Ding*
2. Practical Evaluation of Different Omics Data Integration Methods  
*Wenjia Feng, Zekun Yu, Mingon Kang, Haijun Gong and Tae-Hyuk Ahn*
3. Domain Adaptation for Human Fall Detection Using WiFi Channel State Information  
*Hirokazu Narui, Rui Shu, Stefano Ermon and Fernando Gonzalez*
4. EpiRL: A Reinforcement Learning Agent to Facilitate Epistasis Detection  
*Kexin Huang and Rodrigo Nogueira*
5. Evaluating Ensemble Learning Impact on Gene Selection for Automated Cancer Diagnosis  
*Ke Yan and Huijuan Lu*

**2:35pm - 3:15pm (20 minutes per paper)**

Session 3: Inference (Session Chair: Martin Michalowski)

1. Information Retrieval and Question Answering for Healthcare (Invited talk)  
*Chandan Reddy*
2. MCA-based Rule Mining Enables Interpretable Inference in Clinical Psychiatry  
*Qingzhu Gao, Humberto Gonzalez and Parvez Ahammad*

**3:15pm – 3:45pm**

Coffee Break

**3:45pm - 4:15pm (15 minutes per paper)**

Session 4: Public Health (Short Presentations) (Session Chair: Arash Shaban-Nejad)

1. Guiding public health policy by using grocery transaction data to predict demand for unhealthy beverages  
*Hiroshi Mamiya, Xing Han Lu, Joseph Vybihal, Yu Ma and David Buckeridge*
2. Constructing Accurate Confidence Intervals when Aggregating Social Media Data for Public Health Monitoring  
*Ashlynn Daughton and Michael Paul*

**4:15 pm - 4:30 pm**

Closing remarks -Day 1

## **Monday January 28<sup>th</sup>**

### **9:00 am - 9:50am**

Keynote Speaker: Ram D. Sriram, PhD (National Institute of Standards and Technology)

*Title: Information Technology for the Health Care Enterprise: The Role of Artificial Intelligence*

### **9:50am – 10:35am (15 minutes per paper)**

Session 5: Conversation (Short Presentations) (Session Chair: Martin Michalowski)

1. Spoken Dialogue Systems for Medication Management  
*Joan Zheng, Raymond Finzel, Serguei Pakhomov and Maria Gini*
2. Analysis of Team Medical Care Using Integrated Information from the Trajectories of and Conversations among Medical Personnel  
*Takumi Saito, Masaki Onishi, Ikushi Yoda, Satomi Kuroshima, Michie Kawashima, Kotaro Uchida, Jun Oda, Shiro Mishima and Tetsuo Yukioka*
3. Large-scale Dialog Corpus Towards Automatic Mental Disease Diagnosis  
*Masahito Sakishita, Taishiro Kishimoto, Akiho Takinami, Yoko Eguchi and Yoshinobu Kano*

### **10:35am - 11:00am**

Coffee Break

### **11:00am – 12:00pm (15 minutes per short paper)**

Session 6: Modeling (Short Presentations) (Session Chair: David Buckeridge)

1. Post-operative Real-time Complication Risk Scoring System  
*Wen Wang, Rema Padman and Nirav Shah*
2. Highly Efficient Follicular Segmentation in Thyroid Cytopathological Whole Slide Image  
*Siyao Tao, Yao Guo, Chuang Zhu, Jie Yang, Huang Chen and Yue Zhang*
3. Deep Visual Models for EEG of Mindfulness Meditation in a Workplace Setting  
*Juan Lorenzo Hagad, Ken-Ichi Fukui and Masayuki Numao*
4. End-to-end Joint Entity Extraction and Negation Detection for Clinical Text  
*Parminder Bhatia, Busra Celikkaya and Mohammad Khallilia*

### **12:00pm - 12:20pm**

Closing remarks / discussion