

2019 IEEE International Conference on Healthcare Informatics (ICHI 2019)

**Xi'an, China
10 – 13 June 2019**



**IEEE Catalog Number: CFP1944U-POD
ISBN: 978-1-5386-9139-7**

**Copyright © 2019 by the Institute of Electrical and Electronics Engineers, Inc.
All Rights Reserved**

Copyright and Reprint Permissions: Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. All rights reserved.

****** This is a print representation of what appears in the IEEE Digital Library. Some format issues inherent in the e-media version may also appear in this print version.***

IEEE Catalog Number:	CFP1944U-POD
ISBN (Print-On-Demand):	978-1-5386-9139-7
ISBN (Online):	978-1-5386-9138-0
ISSN:	2575-2626

Additional Copies of This Publication Are Available From:

Curran Associates, Inc
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: (845) 758-0400
Fax: (845) 758-2633
E-mail: curran@proceedings.com
Web: www.proceedings.com

CURRAN ASSOCIATES INC.
proceedings
.com

Table of Contents

Analytics

Learning Deep Representations from Clinical Data for Chronic Kidney Disease	1
<i>Duc Thanh Anh Luong and Varun Chandola</i>	
Weight Loss Prediction in Social-Temporal Context.....	11
<i>Zhiwei Wang, Xiaorui Liu, Jiliang Tang, and Dawei Yin</i>	
Long Distance Entity Relation Extraction with Article Structure Embedding and Applied to Mining Medical Knowledge.....	20
<i>Yucong Lin, Cheng Ma, Daiqi Gao, Zihao Fan, Zijie Cheng, Zheyu Wang, and Sheng Yu</i>	
Categorical EHR Imputation with Generative Adversarial Nets	27
<i>Yinchong Yang, Zhiliang Wu, Volker Tresp, and Peter A. Fasching</i>	
CT-To-MR Conditional Generative Adversarial Networks for Ischemic Stroke Lesion Segmentation	37
<i>Jonathan Rubin and S. Mazdak Abulnaga</i>	
Predicting the Outbreak of the Hand-Foot-Mouth Diseases in China using Recurrent Neural Network	44
<i>Wenxiao Jia, Xiang Li, Kewei Tan, and Guotong Xie</i>	
Estimating Individualized Daily Self-Reported Affect with Wearable Sensors.....	48
<i>Shen Yan, Homa Hosseinmardi, Hsien-Te Kao, Shrikanth Narayanan, Kristina Lerman, and Emilio Ferrara</i>	
Early Detecting In-Hospital Cardiac Arrest Based on Machine Learning on Imbalanced Data.....	57
<i>Hsiao-Ko Chang, Cheng-Tse Wu, Ji-Han Liu, Wee Shin Lim, Hui-Chih Wang, Shu-I Chiu, and Jyh-Shing Roger Jang</i>	
A Machine Learning Model to Characterize Chronic Kidney Disease with Metabolomics Data	67
<i>Yang Yang, Wei-Wei Tong, and Zhangsuo Liu</i>	
Comparing Strategies to Generate Experience-Based Clinical Process Recommendations That Leverage Similarity to Historic Data	73
<i>Steven Mertens, Frederik Gailly, Diederik Van Sassenbroeck, and Geert Poels</i>	
Discovering and Analyzing Trend-Event Patterns on Clinical Data	84
<i>Matteo Mantovani, Carlo Combi, and Matteo Zeggiotti</i>	
Towards Device-Agnostic Mobile Cough Detection with Convolutional Neural Networks.....	94
<i>Filipe Barata, Kevin Kipfer, Maurice Weber, Peter Tinschert, Elgar Fleisch, and Tobias Kowatsch</i>	
GANai: Standardizing CT Images using Generative Adversarial Network with Alternative Improvement.....	105
<i>Gongbo Liang, Sajjad Fouladvand, Jie Zhang, Michael A. Brooks, Nathan Jacobs, and Jin Chen</i>	
Identifying De Facto Prescription Norms in a Hospital Setting: A Study with Antibiotics.....	116
<i>Syeda Momina Tabish, Philip Polgreen, Alberto Maria Segre, and Padmini Srinivasan</i>	

Collecting Digital Biomarkers on Cognitive Health through Computer Vision and Gameplay: An Image Processing Toolkit for Card Games.....	127
<i>Karsten Gielis, Joren Kennes, Christophe De Dobbeleer, Steven Puttemans, and Vero Vanden Abeele</i>	
Time-Aware Adversarial Networks for Adapting Disease Progression Modeling	139
<i>Yuan Zhang, Xi Yang, Julie Ivy, and Min Chi</i>	
Mining Biomedical Data for Hidden Relationship Discovery	150
<i>Sirisha Dharmavaram, Arshad Shaik, and Wei Jin</i>	
Identifying Important Risk Factors Associated with Vehicle Injuries using Driving Behavior Data and Predictive Analytics	160
<i>Michal Monselise, Ou Stella Liang, and Christopher C. Yang</i>	
A Deep Learning Approach to Predict Neonatal Encephalopathy from Electronic Health Records.....	170
<i>Cheng Gao, Chao Yan, Sarah Osmundson, Bradley A. Malin, and You Chen</i>	
Analyzing Patient Decision Making in Online Health Communities.....	177
<i>Mingda Li, Jinhe Shi, and Yi Chen</i>	
Identifying Acute Kidney Injury Trajectory Phenotypes Associated with Hospital Mortality	185
<i>Taylor D. Smith, Victor Ortiz-Soriano, Javier A. Neyra, and Jin Chen</i>	
Pattern-Based Extraction of Disease Drug Combination Knowledge from Biomedical Literature	196
<i>Jing Liu, Rashmie Abeysinghe, Fengbo Zheng, and Licong Cui</i>	
Insomnia Prediction using Temporal Feature of Spindles	203
<i>Hao Yu, Jin Chen, Shiqiang Tao, Taylor D. Smith, Guo-Qiang Zhang, Xiaojin Li, Xiaoqian Jiang, Xiaoling Wang, Xinyu Wang, and Ying Zhang</i>	
Nocturnal Cough and Snore Detection in Noisy Environments using Smartphone-Microphones.....	211
<i>Sudip Vhaduri, Theodore Van Kessel, Bongjun Ko, David Wood, Shiqiang Wang, and Thomas Brunschweiler</i>	
Systems	
A Self-Attention Based Deep Learning Method for Lesion Attribute Detection from CT Reports	218
<i>Yifan Peng, Ke Yan, Veit Sandfort, Ronald M. Summers, and Zhiyong Lu</i>	
Design and Evaluation of a Healthcare Management Terminology Mobile Learning Application.....	223
<i>Yi-Jing Li, Li-Hui Lee, Yu-Ting Cheng, and Yang-Yu Ou</i>	
Center of Mass Estimation for Balance Evaluation using Convolutional Neural Networks.....	232
<i>Wenchuan Wei and Sujit Dey</i>	
Insight Ease: A System for Automated Data-Driven Healthcare Insight Generation	239
<i>Yuan Zhang, Eryu Xia, Bibo Hao, Jing Mei, Yong Qin, Shaochun Li, Wen Sun, Zhengbo Zhang, Xin Du, Changsheng Ma, and Jianzeng Dong</i>	
BioSentVec: Creating Sentence Embeddings for Biomedical Texts	246
<i>Qingyu Chen, Yifan Peng, and Zhiyong Lu</i>	

Multimodal Attention Network for Trauma Activity Recognition from Spoken Language and Environmental Sound	251
<i>Yue Gu, Ruiyu Zhang, Xinwei Zhao, Shuhong Chen, Jalal Abdulbaqi, Ivan Marsic, Megan Cheng, and Randall S. Burd</i>	
A Camera-Based Pulse Transit Time Estimation Approach towards Non-Intrusive Blood Pressure Monitoring.....	257
<i>Omkar R. Patil, Wei Wang, Yang Gao, and Zhanpeng Jin</i>	
Family-HealthVault: A Group Caring and PHI Sharing Framework among Family Members.....	267
<i>Huanmei Wu, Parth Kothiya, Aamir Khan, and Jiannan Liu</i>	
Enabling Care Continuity using a Digital Health Wallet	275
<i>Samuel Osebe, Charles M. Wachira, Fiona Matu, Nelson Bore, David Kaguma, Juliet Mutahi, William Ogallo, Celia Cintas, Sekou L. Remy, Aisha Walcott, and Komminist Weldemariam</i>	
A Blockchain Framework for Ensuring Data Quality in Multi-Organizational Clinical Trials.....	282
<i>Olivia Choudhury, Issa Sylla, Noor Fairoza, and Amar Das</i>	
Obstetric Patients with Repetitious Hospital Location Transfers Have Prolonged Stays.....	291
<i>Cheng Gao, Abel N. Kho, Sarah Osmundson, Bradley A. Malin, and You Chen</i>	
Human Factors	
An Image Contrast Enhancement Algorithm in the Wavelet Domain with Visual Feature for Visually Impaired	299
<i>Fahao Qiao and Jinshan Tang</i>	
Augmented Reality Exposure Therapy with Tactile Feedback for Small Animal Phobia	304
<i>Maximilian Kurscheidt, Vitaliy Ostapchuck, Friederike Sottek, Sebastian Felix Rauh, and Gerrit Meixner</i>	
Toy or Tool? Activity Trackers for the Assessment of Physical Activity in the Wild.....	311
<i>Jochen Meyer, Kai von Holdt, Elke Beck, Mirko Brandes, Claudia Pischke, and Claudia Voelcker-Rehage</i>	
Sneaking Physical Exercise into Sedentary Work Life: Design Explorations of Ambient Reminders in Opportune Moments	320
<i>Elke Beck, Kai von Holdt, Jochen Meyer, and Susanne Boll</i>	
Rich Interactions in Virtual Reality Exposure Therapy: A Pilot-Study Evaluating a System for Presentation Training.....	327
<i>Marius Koller, Philip Schäfer, Daniel Lochner, and Gerrit Meixner</i>	
Motivational Design Techniques to Increase Adherence to a Telemonitoring Therapy a Study with Adolescent Pectus Patients	338
<i>Robin De Croon, Alemitu Mequanint Bezabih, Jonas Geuens, Davina Wildemeersch, Dries Oeyen, Katrien Verbert, and Vero Vanden Abeele</i>	
A Dyad of Lenses for the Motivational Design of mHealth: Bridging the Gap between Health Theory and App Design	350
<i>Jonas Geuens, Luc Geurts, Kathrin Gerling, Robin De Croon, and Vero Vanden Abeele</i>	
Proactive Advising: A Machine Learning Driven Approach to Vaccine Hesitancy.....	362
<i>Andrew Bell, Alexander Rich, Melisande Teng, Tin Orešković, Nuno B. Bras, Lénia Mestrinho, Srdan Golubovic, Ivan Pristas, and Leid Zejnilovic</i>	

Posters and Demos

Using Dual Networks for the Integration of Clinical and Biological Data	368
<i>Pietro Hiram Guzzi, Giuseppe Tradigo, and Pierangelo Veltri</i>	
Predicting Prevalence of Respiratory Disease with Multi-Task Gaussian Process: A Case Study in East China	370
<i>Yuan Zhang, Peiyao Li, Xiaoyan Zhao, Eryu Xia, Jing Mei, Zhicheng Yang, Yong Qin, Shaochun Li, and Zhengbo Zhang</i>	
Deep Inverse Reinforcement Learning for Sepsis Treatment	373
<i>Chao Yu, Guoqi Ren, and Jiming Liu</i>	
Deep Learning Based Lesion Detection for Mammograms	376
<i>Zhenjie Cao, Zhicheng Yang, Xinya Liu, Yanbo Zhang, Shibin Wu, Rwei-Sung Lin, Lingyun Huang, Mei Han, and Jie Ma</i>	
The Role of Health Literacy on Credibility Judgment of Online Health Misinformation	379
<i>Shijie Song, Yuxiang (Chris) Zhao, Xiaokang Song, and Qinghua Zhu</i>	
Novel Algorithm for Identification and Differentiation of Shuffling from Walking	382
<i>Nethra Ganesh Chigateri, Ngaira Kerse, and Bruce MacDonald</i>	
Identity Verification and Management of Electronic Health Records with Blockchain Technology	385
<i>Yiheng Liang</i>	
Towards Neural Abstractive Clinical Trial Text Summarization with Sequence to Sequence Models	388
<i>Celia Cintas, William Ogallo, Aisha Walcott, Sekou L. Remy, Victor Akinwande, and Samuel Osebe</i>	
Combining Resampling and Machine Learning to Improve Sleep-Wake Detection of Fitbit Wristbands.....	391
<i>Zilu Liang and Mario Alberto Chapa-Martell</i>	
Field Trial of Aspiration Pneumonia Prediction Based on Electronic Medical Records	394
<i>Masahiro Hayashitani, Eiji Yumoto, Toshinori Hosoi, Masahiro Kubo, Hiroyuki Hiramitsu, Kensuke Kato, and Mayumi Moriguchi</i>	
Improving Information Retrieval from Electronic Health Records using Dynamic and Multi-Collaborative Filtering	396
<i>Ziwei Fan, Evan Burgun, Titus Schleyer, and Xia Ning</i>	
Robust Assessment of ECG Signal Quality for Wearable Devices	399
<i>Yuanbo Shi, Ning Han, Peiyao Li, Zhicheng Yang, Qian Yuan, Yongsheng Du, Ke Lan, Jiewen Zheng, Desen Cao, and Zhengbo Zhang</i>	
VR Application for Visual Field Measurement of Unilateral Spatial Neglect Patients using Eye Tracking.....	402
<i>Koudai Ogura, Masashi Sugano, Shinichi Takabatake, Yasuo Naitoh, and Kazuyo Nakaoka</i>	
An Open Dataset of Pediatric Activity and Energy Expenditure and Deep Learning Approach for Analysis	404
<i>Xiao Qu, Jianxin Wu, Ting Zhang, and Hongyan Guan</i>	

Identifying Privacy Leakage from User-Generated Content in an Online Health Community - A Deep Learning Approach	407
<i>Yushan Zhu, Xing Tong, and Xi Wang</i>	
Effects upon Postoperative Atrial Fibrillation Prediction of Varied Observation Time Windows	409
<i>Yu Deng, Ethan M. I. Johnson, Kevin Yu, David S. Melnick, Sukhveer S. Sandhu, Mozziyar Etemadi, and Abel N. Kho</i>	
Incorporating Intra-Operative Medication Information for Prediction of Post-Operative Atrial Fibrillation	412
<i>Ethan M. I. Johnson, Jingzhi Yu, Yu Deng, David S. Melnick, Sukhveer S Sandhu, Farhad Ghamsari, Mozziyar Etemadi, and Abel N Kho</i>	
A Method to Determine Angle Kappa via Automated Shape Recognition from Surgical Images	415
<i>Sian Liu, Jingzhi Yu, Jing Zhuang, and Keming Yu</i>	

Industry

A Data-Driven Clinical Decision Support System for Acute Coronary Syndrome Patient Similarity	418
<i>Eryu Xia, Ke Wang, Yuan Zhang, Yiqin Yu, Jing Mei, and Shaochun Li</i>	
The Dr-KGQA System for Automatically Answering Medication Related Questions in Chinese	424
<i>Wei Zhu, Yuan Ni, Guotong Xie, Xiaofeng Zhou, and Cai Chen</i>	

Doctoral Consortium

Towards Automatic Cough and Snore Detection.....	430
<i>Sudip Vhaduri and Thomas Brunschweiler</i>	
Towards Safer Prescription for Gestational Use.....	431
<i>Ou Stella Liang</i>	
Identifying De Facto Prescription Norms from Clinical Data	432
<i>Syeda Momina Tabish and Padmini Srinivasan</i>	
Extracting Phenotypes of Cancer Patients from Electronic Health Records	433
<i>Sicheng Zhou</i>	
Assessment of Cognitive Performance in Elderly Life via Meaningful Play.....	435
<i>Karsten Gielis</i>	
Electronic Health Records Value Analysis	437
<i>Shikha S. Modi</i>	
Towards an Interactive Visualization for Dietary Supplement Knowledge Graph.....	438
<i>Xing He and Jiang Bian</i>	
Modeling Behavioral Traits and Well-Being using Human Biosignals: Challenges and Methods.....	439
<i>Shen Yan</i>	

AI4CDM

MobiCardio: A Clinical-Grade Mobile Health System for Cardiovascular Disease Management	441
<i>Peiyao Li, Zhicheng Yang, Wei Yan, Muyang Yan, Maoqing He, Qian Yuan, Ke Lan, Jiewen Zheng, Tongbo Liu, Desen Cao, and Zhengbo Zhang</i>	
HWProfile UI: Facilitating the Exploration of a Patient Centered Risk Model.....	447
<i>Pierpaolo Tommasi, Stephane Deparis, and Alessandra Pascale</i>	

Computer-Aided Diagnosis of Ambulatory Electrocardiograms via ASRS: Active-Selection-Random-Selection	449
<i>Xuan Zhang, Guangyu Wang, Ning Chen, and Ting Chen</i>	
Accelerating Clinical Practice Guideline Implementation for Chronic Disease Management	458
<i>Jing Li, Jing Mei, and Shaochun Li</i>	
From EHR Data to Medication Adherence Assessment: A Case Study on Type 2 Diabetes	460
<i>Enliang Xu, Jing Mei, Jing Li, Yiqin Yu, Songfang Huang, and Yong Qin</i>	
Multiple MACE Risk Prediction using Multi-Task Recurrent Neural Network with Attention	468
<i>Enliang Xu, Shiwan Zhao, Jing Mei, Eryu Xia, Yiqin Yu, and Songfang Huang</i>	
Predicting Hospital Readmission of Diabetics using Deep Forest	470
<i>Pengwei Hu, Shaochun Li, Yu-an Huang, and Lun Hu</i>	

HealthNLP

Information Extraction for Populating Lung Cancer Clinical Research Data	472
<i>Liwei Wang, Lei Luo, Yanshan Wang, Jason A. Wampfler, Ping Yang, and Hongfang Liu</i>	
TestIME: A Tool for Testing Chinese Input Method Engines in Electronic Medical Record Entry Task.....	474
<i>Feihong Yang and Jiao Li</i>	
Combined Attention Mechanism for Named Entity Recognition in Chinese Electronic Medical Records	476
<i>Luqi Li and Li Hou</i>	
A Hybrid Semantic Relatedness Algorithm by Entity Co-Occurrence and Specialized Word Embeddings.....	478
<i>Go Eun Heo and Qing Xie</i>	
A Study of Deep Learning Methods for De-Identification of Clinical Notes at Cross Institute Settings	480
<i>Xi Yang, Tianchen Lyu, Chih-Yin Lee, Jiang Bian, William R. Hogan, and Yonghui Wu</i>	
RCorp: A Resource for Chemical Disease Semantic Extration in Chinese	483
<i>Yueping Sun, Li Hou, Lu Qin, Jiao Li, and Qing Qian</i>	
Detect Attributes of Medical Concepts via Sequence Labeling.....	485
<i>Jun Xu, Zhiheng Li, Qiang Wei, Yonghui Wu, Yang Xiang, Hee-Jin Lee, Yaoyun Zhang, Stephen Wu, and Hua Xu</i>	
Improving Rare Disease Classification using Imperfect Knowledge Graph	487
<i>Xuedong Li, Yue Wang, Dongwu Wang, Walter Yuan, Dezhong Peng, and Qiaozhu Mei</i>	
Using the WHO Database of Spontaneous Reports to Build Joint Vector Representations of Drugs and Adverse Drug Reactions, a Promising Avenue for Pharmacovigilance	489
<i>Lucie M. Gattepaille</i>	

SemanticMH

Assessing Depression Risk in Chinese Microblogs: A Corpus and Machine Learning Methods.....	495
<i>Xiaofeng Wang, Shuai Chen, Tao Li, Wanting Li, Yejie Zhou, Jie Zheng, Yaoyun Zhang, and Buzhou Tang</i>	

Analysis of Twitter to Identify Topics Related to Eating Disorder Symptoms	500
<i>Sicheng Zhou, Yunpeng Zhao, Rubina Rizvi, Jiang Bian, Ann F. Haynos, and Rui Zhang</i>	
PSPS: A Pharmacological Substances Prediction System Based on Biomedical Literature Data	504
<i>Jinhe Gao, Guozheng Rao, Li Zhang, and Yangzi Zhong</i>	
Combining Clinical Data and Domain Knowledge for Analyzing Mental Disorder Concept Relatedness and Usage.....	509
<i>Duo (Helen) Wei, Casey Ta, Harold Alan Pincus, and Chunhua Weng</i>	
STAT: A Web-Based Semantic Text Annotation Tool to Assist Building Mental Health Knowledge Base.....	515
<i>Xing He, Hansi Zhang, Xi Yang, Yi Guo, and Jiang Bian</i>	
Systematic Design of Drug Repurposing-Oriented Alzheimer's Disease Ontology	519
<i>Fang Li, Yang Xiang, Jingcheng Du, Mingqiang Wang, Muhammad "Tuan" Amith, Guozheng Rao, Huy Anh Pham, and Cui Tao</i>	

Tutorials

Translational Health Informatics from Risk Prediction Modeling to Risk Assessment Service	524
<i>Jing Mei, Enliang Xu, Bibo Hao, Yuan Zhang, Yiqin Yu, and Shaochun Li</i>	
Learning Health Systems	526
<i>Georgina Moulton and Paul Taylor</i>	

Data Analytics Challenge Podium Abstracts

An Ensemble Method for Data Imputation.....	528
<i>Yichen Ding, W. Nick Street, Ling Tong, and Shangguan Wang</i>	
Comparing Different Imputation Methods for Incomplete Longitudinal Data on Clinical Dataset.....	531
<i>Bo Jin, Yuxin Bai, and Chongyuan Wang</i>	
Context-Aware Imputation for Clinical Time Series	533
<i>Kejing Yin and William K. Cheung</i>	
IEEE ICHI Data Analytics Challenge on Missing Data Imputation by Amelia II.....	536
<i>Xiaoshuang Liu, Xinyue Ma, Xiaoyan Meng, Xiang Li, and Guotong Xie</i>	
Deep Imputation of Temporal Data	538
<i>Chao Yan, Cheng Gao, Xinmeng Zhang, You Chen, and Bradley Malin</i>	
Estimating Missing Values in Multivariate-Time-Series Clinical Data using Gradient Boosting Tree on Temporal and Cross-Variable Features.....	541
<i>Xiao Xu, Junmei Wang, Xian Xu, Yuyao Sun, Quanhe Chen, Xiang Li, and Guotong Xie</i>	
eXITs: An Ensemble Approach for Imputing Missing EHR Data.....	544
<i>James Codella, Hillol Sarker, Prithwish Chakraborty, Mohamed Ghalwash, Zijun Yao, and Daby Sow</i>	
Interpatient Similarity-Based Imputation of Missing Data in Electronic Health Records	547
<i>Ali Jazayeri, Ou Stella Liang, and Christopher C. Yang</i>	

Interpolation and K-Nearest Neighbours Combined Imputation for Longitudinal ICU Laboratory Data.....	550
<i>Sebastian Daberdaku, Erica Tavazzi, and Barbara Di Camillo</i>	
MICE-DA: A MICE Method with Data Augmentation for Missing Data Imputation in IEEE ICHI 2019 DACMI Challenge	553
<i>Ping Sun</i>	
Missing Data Imputation for MIMIC-III using Matrix Decomposition.....	556
<i>Xi Yang, Yeo Jin Kim, Farzaneh Khoshnevisan, Yuan Zhang, and Min Chi</i>	
Non-Linear Regression Models for Imputing Longitudinal Missing Data.....	559
<i>Manar D. Samad and Linlin Yin</i>	
Recurrent Imputation for Multivariate Time Series with Missing Values	562
<i>Qiuling Suo, Liuyi Yao, Guangxu Xun, Jianhui Sun, and Aidong Zhang</i>	
Using Temporal Feature Aggregation and Gradient Boosting Tree on Missing Data Imputation	565
<i>Yanni Kang, Xiaoyu Jia, Xiang Li, and Guotong Xie</i>	
XGBoost Imputation for Time Series Data	567
<i>Xinmeng Zhang, Chao Yan, Cheng Gao, Bradley Malin, and You Chen</i>	
A Likelihood-based Convolution Approach to Estimate Event Occurrences in Large Longitudinal Incomplete Clinical Data	*I €
<i>Lisiane Pruinelli, Bethany Stai, Sisi Ma, Timothy Pruett, and Gyorgy J. Simon</i>	
A Multi-Dimensional General Health Status Concept to Predict Liver Transplant Mortality	*I Ì
<i>Lisiane Pruinelli, Bonnie L. Westra, Timothy Pruett, Karen A. Monsen, Cynthia R. Gross, David R. Radosevich, Sisi Ma, Gyorgy J. Simon</i>	
An Association-Based Intrinsic Quality Index for Healthcare Dataset Ranking	*I H
<i>Jingyi Shi, Jialin Zhang, Yaorong Ge</i>	
Biomedical Semantic Embeddings: Using Hybrid Sentences to Construct Biomedical Word Embeddings and Its Applications	*I JF
<i>Arshad Shaik and Wei Jin</i>	

*n/a - paper not presented at conference