



IEEE International Conference on Healthcare Informatics 2013

September 9 – 11, 2013

Philadelphia, PA, USA

DoubleTree by Hilton Hotel Philadelphia Center City



ICHI 2013 - Program at a Glance

	Sept 9 (Monday)	Sept 10 (Tuesday)	Sept 11 (Wednesday)
8:45 – 9:00 am	Opening Ceremony		
9:00 – 10:00 am	Keynote Speech I <i>Improving Safety in Medical Devices and Systems</i>	Keynote Speech III <i>Digitally Revealing the Dynamics of Your Superorganism Body</i>	Sessions D3-1 / Workshop - DMH
10:00 – 10:30 am	Coffee Break	Coffee Break	Coffee Break
10:30 am – 12:00 pm	Sessions D1-1	Sessions D2-1	Tutorial/ Workshops - WMCCH / DMH
12:00 – 1:00 pm	Lunch	Lunch	Lunch / ICHI steering committee meeting
1:00 – 2:30 pm	Keynote Speech II <i>Watson, Cognitive Computing and Healthcare</i>	Sessions D2-2	Doctoral Consortium / Workshops - HRPCRM/ DMH
2:30 – 3:00 pm	Coffee Break	Coffee Break	Coffee Break
3:00 – 4:30 pm	Sessions D1-2	Session Panel /D2-3	Doctoral Consortium / Workshops - HRPCRM/ DMH
4:30 – 5:00 pm	Break	Extended Abstract	
5:00 – 7:00 pm	Posters I & Reception	Posters & Posters II	
7:00 – 9:00 pm		Banquet & Best Paper Award	

NOTE:

DMH: International Workshop on Data Mining for Healthcare
 WMCCH: The First Workshop on Mobile Cloud Computing in Healthcare
 HRPCRM: Workshop on Hospital Readmission and Clinical Risk Management
 DMH will start at 8:50 am on September 11 (Wednesday)

Please join us at:

 tinyurl.com/ICHI2013-LinkedInGroup



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tinyurl.com/ICHI2013-twitter #ICHI2013

Sept 9 (Monday)

	Symphony	Aria
8:45 – 9:00 am	Opening Ceremony	
9:00 – 10:00 am	Keynote Speech I	
10:30 am – 12:00 pm	D1-1A	D1-1B
1:30 – 2:30 pm	Keynote Speech II	
3:00 – 4:30 pm	D1-2A	D1-2B
5:00 – 7:00 pm	Posters I & Reception	

Sept 10 (Tuesday)

	Symphony	Aria
9:00 – 10:00 am	Keynote Speech III	
10:30 am – 12:00 pm	D2-1A	D2-1B
1:00 – 2:30 pm	D2-2A	D2-2B
3:00 – 4:30 pm	Panel	D2-3B
4:30 – 5:30 pm	Extended Abstract Poster Session	
5:45 – 7:00 pm	Posters II	
7:00 – 9:00 pm	Banquet & Best Paper Award	

Sept 11 (Wednesday)

	Symphony	Concerto	Orchestra
9:00 am – 10:00 am	DMH	D3-1A	D3-1B
10:30 am – 12:00 pm	DMH	Tutorial	WMCCH
1:00 – 2:30 pm	DMH	Doctoral Consortium	HRPCRM
3:00 – 4:30 pm	DMH	Doctoral Consortium	HRPCRM

Keynote Speech I

Improving Safety in Medical Devices And Systems



Harold Thimbleby
Professor of Computer Science, Swansea University, UK

Abstract

We need to improve healthcare technologies — electronic patient records, medical devices — by reducing use error and, in particular, unnoticed errors, since unnoticed errors cannot be managed by clinicians to reduce patient harm. Every system we have examined has multiple opportunities for safer design, suggesting a safety scoring system. Making safety scores visible will enable all stakeholders (regulators, procurers, clinicians, incident investigators, journalists, and of course patients) to be better informed, and hence put pressure on manufacturers to improve design safety. In the longer run, safety scores will need to evolve, both to accommodate manufacturers improving device safety and to accommodate insights from further research in design-induced error.

Biography

Harold Thimbleby, HonFRSA, FIET, CEng, FRCPE is in Swansea University's Department of Computer Science, Wales — one of the world's most beautiful Universities. He is a well-known computer scientist (he has been a Royal Society Wolfson Research Merit award holder and a Royal Society Leverhulme Trust Senior Research Fellow), but he became concerned about healthcare when one of his students ended up in intensive care. He has since been working on human error and system design to make healthcare safer. His 2007 book on his work Press On (MIT Press) won two international prizes. Although a computer scientist, he was recently elected a Fellow of the Royal College of Physicians, Edinburgh.

Keynote Speech II

Watson, Cognitive Computing and Healthcare



Martin S. Kohn, MD, MS, FACEP, CPE, FACPE
Chief Medical Scientist for Care Delivery Systems in IBM Research

Abstract

We have solid ideas about the flawed state of healthcare, the critical need for change and the future we want. Improving health outcomes while controlling costs and personalizing healthcare are among the objectives. It is clear that enabling the transformation of healthcare will require making better decisions. At the same time we are dealing with huge and expanding volumes of data. We will need tools to help us gather and analyze data to bring relevant information to decision makers so that it easier to obtain evidence-supported choices. Unstructured, text-like content is a large fraction of the data we rely on for decisions. Up until recently we have had limited ability to use unstructured material effectively. IBM's Watson, with its ability to understand the nature of a question being addressed and to read and understand huge volumes of literature, makes such material more approachable. However, making medicine more precise mandates the use of other forms of data, and population observational techniques. Predictive analytics, to identify people that need specific attention, and comparative analytics to elicit evidence from populations that can be applied to individuals, are part of the process. IBM has developed robust resources that provide such information.

Biography

Dr. Kohn is Chief Medical Scientist for Care Delivery Systems in IBM Research. He is a leader in IBM's effort in collaborative care for addressing the challenges to primary care and access to healthcare. He also supports the transformation of healthcare and development of accountable care organizations. His research work includes healthcare population analytics and the role of expert systems in the clinical decision process, including the use of the Watson supercomputer in healthcare. He speaks frequently on the issues on healthcare transformation, the role of information technology, the Patient Centered Medical Home and clinical decision support. Dr. Kohn is a co-author of IBM's white paper "Patient-Centered Medical Home – What, Why and How." He is on the editorial board of the Journal of Emergency Medicine. Dr. Kohn was previously in IBM Healthcare Strategy and Change which helped healthcare systems and clinicians optimize process and make best use of health information technology. He has published multiple articles and book chapters on both clinical and management subjects. Dr. Kohn is an emergency physician with over 30 years of hospital-based practice and management experience. He is a Fellow of the American College of Emergency Physicians and the American College of Physician Executives.

Keynote Speech III

Digitally Revealing the Dynamics of Your Superorganism Body



Larry Smarr

Founding Director of the California Institute for Telecommunications and Information Technology (Calit2)

Harry E. Gruber Professor of Computer Science and Information Technologies, University of California, San Diego, USA

Abstract

For over a decade, Calit2 has had a driving vision that healthcare is being transformed into “digitally enabled genomic medicine.” To put a more personal face on the “patient of the future,” I have been increasingly quantifying my own body. In addition to external markers I also currently track over 100 blood and stool biomarkers every few months. Calit2 uses advanced interactive visualization techniques to visually explore my organs. Using my saliva 23andme.com obtained 1 million single nucleotide polymorphisms (SNPs) in my human DNA. My gut microbiome has been metagenomically sequenced by the J. Craig Venter Institute, yielding 25 billion DNA bases. I will show how one can use this Big Data approach to decipher the complex dynamic interactions between the various components of my immune system and the human and microbial DNA present in my “superorganism” body. Doing so in my case led to the unexpected diagnosis of a chronic incurable disease. My hope is that by “living in the future” I can provide some early insights into the digital transformations of wellness and health care.

Biography

Larry Smarr is the founding Director of the California Institute for Telecommunications and Information Technology (Calit2) and the Harry E. Gruber professor in UCSD’s Department of Computer Science and Engineering (CSE). Before that he served as founding Director of the National Center for Supercomputing Applications (NCSA). He is a member of the National Academy of Engineering and a Fellow of the American Physical Society and the American Academy of Arts and Sciences. He serves on the NASA Advisory Council to the NASA Administrator, the DOE ESnet Policy Board, and chairs the NSF Advisory Committee on Cyberinfrastructure. For eight years he was a member of the NIH Advisory Committee to the NIH Director, serving 3 directors. His life-streaming portal is <http://lsmarr.calit2.net/index>

Detailed Program

Registration Desk Opening Hours

Sep 9: 8:00 pm – 6:30 pm

Sep 10: 8:00 am – 6:30 pm

Sep 11: 8:00 am – 12:00 pm

September 9, 2013

8:45 – 9:00 am

**Opening Ceremony
Symphony**

9:00 – 10:00 am

**Keynote Speech I
Symphony**

Session Chair: Yin-Leng Theng

Improving Safety in Medical Devices and Systems

Harold Thimbleby

Professor of Computer Science, Swansea University, UK

10:00 – 10:30 am

Coffee Break

10:30 am – 12:00 pm

**D1-1A: Drug Management
Symphony**

Session Chair: Giuseppe Pozzi

Dealing with data sparsity in Drug Named Entity Recognition

Dimitrios Piliouras, Ioannis Korkontzelos, Andrew Dowsey and Sophia Ananiadou

Harnessing Social Media for Drug-Drug Interactions Detection

Haodong Yang and Christopher Yang

Toward Creating a Gold Standard of Drug Indications from FDA Drug Labels

Ritu Khare, Jiao Li and Zhiyong Lu

**D1-1B: Human Factors: Applications
Aria**

Session Chair: Larry Hodges

*MediFrame: A Tablet Application to Plan, Inform, Remind and Sustain Older Adults
Medication Intake*

Lea Gulstav Dalgaard, Erik Grönvall and Nervo Verdezoto

*On-Demand Virtual Health Counselor for Delivering Behavior-Change Health
Interventions*

Reza Amini, Christine Lisetti and Ugan Yasavur

Using Medical Device Logs for Improving Medical Device Design

Abigail Cauchi, Harold Thimbleby, Michael Harrison and Patrick Oladimeji

12:00 – 1:00 pm

Lunch

Balcony

1:00 pm – 2:30 pm

Keynote Speech II

Symphony

Session Chair: Carlo Combi

Watson, Cognitive Computing and Healthcare

Martin S. Kohn

Chief Medical Scientist for Care Delivery Systems in IBM Research

2:30 – 3:00 pm

Coffee Break

3:00 – 4:30 pm

D1-2A: Health Text analytics I

Symphony

Session Chair: Zoran Obradovic

*Supervised Extraction of Diagnosis Codes from EMRs: Role of Feature Selection, Data
Selection, and Probabilistic Thresholding*

Anthony Rios and Ramakanth Kavuluru

*Using Co-occurrence Analysis to Expand Consumer Health Vocabularies from Social
Media Data*

Ling Jiang and Christopher Yang

Automatic Information Extraction in the Medical Domain by Cross-Lingual Projection

Asma Ben Abacha, Pierre Zweigenbaum and Aurélien Max

D1-2B: Interactivity and Modality Aria

Session Chair: Jun Zhang

Empirical Evaluation of Traditional vs. Hybrid Interaction Metaphors in a Multitask Healthcare Simulation

Lauren Cairco Dukes, Jeffrey Bertrand, Manan Gupta, Rowan Armstrong, Tracy Fasolino, Sabarish Babu and Larry F. Hodges

Olfactory Measurement System to quantify the ability to smell using pulse ejection

Aya Fukasawa, Risa Suzuki and Ken-Ichi Okada

Elderly Cardiac Patients Medication Management: Patient Day-To-Day Needs and Review of Medication Management Systems

Anandhi Dhukaram and Chris Baber

4:30 – 5:00 pm

Break

5:00 – 7:00 pm

Posters I: Systems and Human Factors

& Reception

Overture

PASTEL: A Semantic Platform for Assisted Clinical Trial Patient Recruitment

David Damen, Kim Luyckx, Geert Hellebaut and Tim Van Den Bulcke

Secure Access Control for Health Information Sharing Systems

Suhair Alshehri and Rajendra Raj

A study of DWT and SVD based Watermarking Algorithms for Patient Privacy in Medical Images

Sachin Mehta, Rajarathnam Nallusamy, Ranjeet Marawar and Balakrishnan Prabhakaran

Privacy-centric Access Control for Distributed Heterogeneous Medical Information Systems

Atif Khan and Ian McKillop

Evaluation and Enhancement of an Intraoperative Insulin Infusion Protocol via In-Silico Simulation

Benjamin Kohl, Sanjian Chen, Margaret Mullen- Fortino and Insup Lee.

A Method Using Candidate Exploration and Ranking for Abbreviation Resolution in Clinical Documents

Jong-Beom Kim, Heung-Seon Oh, Sang-Soo Nam and Sung-Hyon Myaeng.

Decision Support System for Constantly Monitoring Patients in a Comorbid Condition

Di Lin, Fabrice Labeau and Subhra Mohapatra.

Monitoring Public Health Concerns Using Twitter Sentiment Classifications

Xiang Ji, Soon Ae Chun and James Geller.

An Agile Framework to Support Distributed Medical Imaging Scenarios

Luís António Bastião Silva, Carlos Costa and José Luís Oliveira.

Querying Complex Clinical Data Using Ontological Mapping and Subsumption Reasoning

Licong Cui, Remo Mueller, Satya Sahoo and Guo-Qiang Zhang.

New Horizons for Patient Safety: LIGRA (Life Guard For Robotic Surgery Assistance), An Interactive Platform Centralizing Information and Control in Robotic Surgery Operating Rooms

Jean Vaucher, Elettra Oleari, Monica Verga, Angelica Morandi, Alberto Sanna and Hannes Bleuler

Content Analysis on User-Focused Support Features of Online Support Sites for Geriatric Depression

Jinhui Li, Yin-Leng Theng, Schubert Foo and Owen Noel Newton Fernando

On Time-Use Surveys for Ubiquitous Computing Solutions in a Pharmacy Environment

Minh Hyunh, Kevin Lo and Emmanuel Agu

RFID-Based Public Space Navigation System for the Visually Impaired

Punit Dharani, Benjamin Lipson, Devin Thomas and Emmanuel Agu

September 10, 2013

9:00 – 10:00 am

Keynote Speech III Symphony

Session Chair: Zhiyong Lu

Digitally Revealing the Dynamics of Your Superorganism Body

Larry Smarr

Founding Director of the California Institute for Telecommunications and Information Technology (Calit2)

10:00 – 10:30 am

Coffee Break

10:30 am – 12:00 pm

D2-1A: Health organization and epidemiology Symphony

Session Chair: Akhil Kumar

Jeev: A Low-Cost Cell Phone Application for Tracking the Vaccination Coverage of Children in Rural Communities

Anas Katib, Deepthi Rao, Praveen Rao and Karen Williams

Evaluating Strategies for Pandemic Response in Delhi Using Realistic Social Networks

Huadong Xia, Kalyani Nagaraj, Jiangzhuo Chen and Madhav Marathe

Face Matching for Post-Disaster Family Reunification

Eugene Borovikov, Szilard Vajda and Sameer Antani

D2-1B: Human Factors: Effects and Outcomes I Aria

Session Chair: Denise Anthony

Do Health Care Users Think Electronic Health Records Are Important for Themselves and Their Providers?

Denise Anthony and Celeste Campos-Castillo

Dispelling Myths and Misinformation Using Social Media: A Three-Countries Comparison Using the Case of Tuberculosis

Yin Leng Theng, Lynette Goh, May Lwin and Schubert Foo

Put a Face to a Name (Part A): Preliminary Results Attest the Need for an App to Display Pictures and Names of The Care-Team Members to Hospitalized Patients, for Better Patient-Clinician Communication

Lora Appel and Robert Wu

12:00 – 1:00 pm

Lunch

Balcony

1:00 – 2:30 pm

**D2-2A: Health Risk Prediction I
Symphony**

Session Chair: Julio Facelli

Any Language Early Detection of Epidemic Diseases from Web News Streams

Romain Brixtel, Gaël Lejeune, Antoine Doucet and Nadine Lucas

Fall Detection based on Sequential Modeling of Radar Signal Time-Frequency Features

Meng Wu, Xiaoxiao Dai, Yimin Zhang, Bradley Davidson, Moeness Amin and Jun Zhang

Risk Prediction of a Multiple Sclerosis Diagnosis

Joyce Ho, Joydeep Ghosh and K.P Unnikrishnan

**D2-2B: Home-assistance and individual Care
Aria**

Session Chair: Jose M Juarez

Estimating Daily Energy Expenditure from Video for Assistive Monitoring

Alex Edgcomb and Frank Vahid

A Publish/Subscribe Middleware for Body and Ambient Sensor Networks that Mediates between Sensors and Applications

Christian Seeger, Kristof Van Laerhoven, Jens Sauer and Alejandro Buchmann

Automated In-Home Assistive Monitoring with Privacy-Enhanced Video

Alex Edgcomb and Frank Vahid

2:30 – 3:00 pm

Coffee Break

3:00 – 4:30 pm

**Panel
Symphony**

Social Media and Patient-centered Research

Simon Lin, Marshfield Clinical Research Foundation

Rebecca Chiu, MedHelp

Akhil Kumar, Pennsylvania State University

Christopher C. Yang, Drexel University

D2-3B: Web-based architectures and User Interactions Aria

Session Chair: Praveen Rao

The Effect of Interaction and Visual Fidelity on the Learning Outcomes of a Virtual Pediatric Patient Interview System

Toni Pence, Lauren Dukes, Larry Hodges, Nancy Meehan and Arlene Johnson
Social Support and Exchange Patterns in an Online Smoking Cessation Intervention Program

Mi Zhang, Christopher Yang and Xuemei Gong
Supporting N-Screen Medical Data Access in mHealth
Richard Lomotey and Ralph Deters

4:30 – 5:30 pm

Extended Abstract Posters

Overture

A Cooperative Localization Technique for Tracking in Hospitals and Nursing Homes

Denis Rodionov, George Kolev, Kirill Bushminkin

MPI parallelization of innovative DPD thermostats

N. Goga, H. Berendsen, S.A. Moga, G. Dragoi, A. Hadar, B. Paviloiu

StressFree – A Tool for Stress Determination and Treatment through Computer Music Generation

Alexandra Todiruta, Maria Goga, Lucian Pestritu, Nicolae Goga, Luminita Ciobanu

Questor: Medical Report Search Engine

Andrei Vasilateanu, Nicolae Goga, Florica Moldoveanu, Alin Moldoveanu, Cristian Taslitchi

Factors Related To Eating Habits Of First-Year University Students

Masashi Sugano, Aya Akasaka

Vim: Vital Signs in Musiccreatively Facilitating Effective Long-Term Wellbeing Self-Management

Yunqiu Li and Harold Thimbleby

Visualization of Privacy Filters for Sharing Sensor-based Health Data

Edward Klein and Jesse Heines

Visualizing Hidden Associations in Health Care Data using Correspondence Analysis

Peter Kokol

A Service Oriented Framework to Assess the Quality of Electronic Health Data for Clinical Research

Naresh Sundar Rajan, Ramkiran Gouripeddi and Julio Facelli

Improving Nursing Care Planning In Palliative Care

Krista Elvidge

Using Social Network Analysis to Identify Key Players Within Clinical Teams for Improving Pain Management

Prasanna Desikan, Nilanjana Banerji, Stacey Ferguson and Heather Britt

Can NAO Robot Improve Eye-Gaze Attention of Children with High Functioning Autism?

Huanghao Feng, Anibal Gutierrez, Jun Zhang and Mohammad Mahoor

Improving Clinical Trial Online Search Efficiency Using Natural Language Processing and Biomedical Ontology Mapping Approach

Duo Wei and Tiara Campbell

Dynamic Disease Forecast Network Using Family Medical History

Rajeev Agrawal, Muhammad Suleiman, Cameron Seay and Clay Gloster

CHOP's Analytics Roadmap and Perioperative Transfusion Analysis Case Study

Jorge A. Gálvez, Luis Ahumada, Allan F. Simpao, Elaina E. Lin, Christopher P.

Bonafide, Dhruv Choudhry, William R. England, Abbas F. Jawad, David Friedman,

Debora A. Sesok-Pizzini, Mohamed A. Rehman

5:45 – 7:00 pm

Posters II: Analytics and Human Factors

Overture

Image-based Fall Detection with Human Posture Sequence Modeling

Xiaoxiao Dai, Meng Wu, Bradley Davidson, Mohammad Mahoor and Jun Zhang

A Microscopic Image Classification Method using Shearlet Transform

Hadi Rezaeilouyeh, Mohammad Mahoor, Seyedmohammad Mavadati and Jun Zhang

Multiple Temporal Axes for Visualising the Behaviour of Elders Living Alone

Jose M. Juarez, Jose Ochotorena, Manuel Campos and Carlo Combi

Clinical Schedule Management using Similarity-based Mining Methods

Shusaku Tsumoto, Haruko Iwata and Shoji Hirano

Characterizing the Performance and Behaviors of Runners Using Twitter

Qian He, Emmanuel Agu, Peder Pederson, Diane Strong and Bengisu Tulu

Predicting Readmission Risk with Institution Specific Prediction Models

Shipeng Yu, Alexander van Esbroeck, Faisal Farooq, Glenn Fung, Vikram Anand and Balaji Krishnapuram

Estimating Distortion Parameters in Simulated Prosthetic Vision

Parvathi Chundi, Mahadevan Subramaniam, Eyal Margalit and Abhilash Muthuraj

Faulty and Missing Body Sensor Data Analysis

Duk-Jin Kim and Balakrishnan Prabhakaran

Exploiting External Data for Training a Cancer-Revealing Clause Classifier

Sangsoo Nam and Sung-Hyon Myaeng

Tell Me What I Don't Know - Making the most of Social Health Forums

Jerry Rolia, Wen Yao, Sujoy Basu, Wei-Nchih Lee, Sharad Singhal, Akhil Kumar and Sharat Sabbella.

Modeling Meaningful Use as Utility in Emergency Medical Services

Steven Haynes, Thomas Winkler and Frank Ritter

Using Nomograms to Reduce Harm From Clinical Calculations

Harold Thimbleby and David Williams

7:00 - 9:00 pm
Banquet & Best Paper Award Ceremony
Symphony

September 11, 2013

9:00 – 10:00 am

**International Workshop on Data Mining for Healthcare Session I
Symphony**

**D3-1A: Health Risk Prediction II
Concerto**

Session Chair: Shipeng Yu

Heart Failure Risk models and their readiness for clinical practice

Gert-Jan de Vries, Gijs Geleijnse, Aleksandra Tesanovic and Ramon van de Ven

Automated Trauma Incident Cubes Analysis

Ankit Srivastava, Lisa Ferrigno, Stephen Kaminski, Xifeng Yan and Jianwen Su

**D3-1B: Health Text analytics II
Orchestra**

Session Chair: Shusaku Tsumoto

*Mining Association Rules for Neurobehavioral and Motor Disorders in Children
Diagnosed with Cerebral Palsy*

Chihwen Cheng, Thomas Burns and May Dongmei Wang

Figure Classification for Biomedical Article Retrieval

Zhiyun Xue, Sameer Antani, Rodney Long, Dina Demner-Fushman and George

Thoma

10:00 – 10:30 am

Coffee Break

10:30 am – 12:00 pm

**International Workshop on Data Mining for Healthcare
Symphony**

**Tutorial
Concerto**

Big Data Analytics for Healthcare

Jimeng Sun and Chandan K. Reddy

**The First Workshop on Mobile Cloud Computing in Healthcare
Orchestra**

12:00 – 1:00 pm

**Lunch
Balcony**

1:00 – 2:30 pm

**International Workshop on Data Mining for Healthcare
Symphony**

**Doctoral Consortium
Concerto**

**Workshop on Hospital Readmission Prediction and Clinical Risk Management
Orchestra**

2:30 – 3:00 pm

Coffee Break

3:00 – 4:30 pm

**International Workshop on Data Mining for Healthcare
Symphony**

**Doctoral Consortium
Concerto**

**Workshop on Hospital Readmission Prediction and Clinical Risk Management
Orchestra**

Doctoral Consortium Program

1:00 - 4:30pm

Poster Exhibition

A Federated Architecture for Biomedical Data Integration

Luís A. Bastião Silva, University of Aveiro, Portugal

An Ongoing Research Project on Dynamic Prediction of Length of Stay

Ali Azari, Department of Information Systems, UMBC, Baltimore, MD

Approach for Capturing Movement Data and Monitoring Compliance during Stroke Rehabilitation

Eric L. Luster, Arizona State University, Tempe, Arizona, USA

Developing a Service Oriented Framework to Assess the Quality of Electronic Health Data for Clinical Research

Naresh Sundar Rajan, Department of Biomedical Informatics and Center for High Performance Computing, Salt Lake City, Utah

Home-based Healthcare Technology

Nervo Xavier Verdezoto, Department of Computer Science, Aarhus University, Denmark

Mobile Application Concept Development for Remote Patient Monitoring

Ljilja Kascak, Georgia Institute of Technology

Semantic Interoperability with Decision Support for Infectious Disease

Murugavell Pandiyan, Kalasalingam University, Krishnan Koil, India

Social Analytics for Public Health Intelligence and Monitoring

Xiang Ji, Computer Science Department of New Jersey Institute of Technology

Supporting Cardiac Patients Self-Care Decision Making Using Mobile Phones

Anandhi Vivekanandan Dhukaram, School of Electronics, Electrical and Computer Engineering, University of Birmingham, UK

Temporal Pattern Discovery and Risk Stratification for Patients with Cancer

Saeed Mehrabi, School of Informatics, Indiana University, Indianapolis

Toward Efficient Access Control for Healthcare Environments Using Attributes and Pseudoroles

Suhair Alshehri, Rochester Institute of Technology, Rochester, NY, USA

Towards Personalized and Accessible mHealth Applications

Daihua Xie Yu, Department of Health Information Management, University of Pittsburgh, PA

Visualization of Privacy Filters for Sharing Sensor-based Health Data

Edward L. Klein, University of Massachusetts, Lowell

1:00 - 2:00pm

Face-to-Face Mentorship

Every selected student will have a personal meeting with a senior mentor assigned by the DC chairs.

2:00 - 2:30pm

Oral Presentations

A Federated Architecture for Biomedical Data Integration

Luís A. Bastião Silva, University of Aveiro, Portugal

Approach for Capturing Movement Data and Monitoring Compliance during Stroke Rehabilitation

Eric L. Luster, Arizona State University, Tempe, Arizona, USA

Developing a Service Oriented Framework to Assess the Quality of Electronic Health Data for Clinical Research

Naresh Sundar Rajan, Department of Biomedical Informatics and Center for High Performance Computing, Salt Lake City, Utah

2:30 - 3:00 pm

Coffee Break

2:30pm - 3:30pm

Oral Presentations

Home-based Healthcare Technology

Nervo Xavier Verdezoto, Department of Computer Science, Aarhus University, Denmark

Towards Personalized and Accessible mHealth Applications

Daihua Xie Yu, Department of Health Information Management, University of Pittsburgh, PA

Visualization of Privacy Filters for Sharing Sensor-based Health Data

Edward L. Klein, University of Massachusetts, Lowell

3:30pm - 4:30pm

Open Discussion (panel):

Dissertation Proposal, Dissertation Execution, Job Search, And Grant Seeking

Workshop Programs

International Workshop on Data Mining for Healthcare (DMH 2013)

Time	Title
8:50 AM - 9:00 AM	Introduction
9:00 AM to 9:20 AM	Privacy and Fraud <i>A Novel Approach to Uncover Health Care Frauds Through Spectral Analysis</i> Song Chen and Aryya Gangopadhyay
9:20 AM to 10:10 AM	Invited Talk /Privacy and Fraud <i>Predictive Modeling of Large Healthcare Data under Privacy Constraints</i> <i>Speaker: Joydeep Ghosh, University of Texas at Austin</i> <i>Invited talk to include the following workshop paper presentation: Perturbed Gibbs Samplers for Generating Large-Scale Privacy-Safe Synthetic Health Data.</i> Yubin Park, Joydeep Ghosh, and Mallikarjun Shankar
10:10 AM - 10:30 AM	Coffee Break
10:30 AM - 10:50 AM	Screening and Diagnosis <i>Removing Confounding Factors via Constraint-Based Clustering: An Application to Finding Homogeneous Groups of MS Patients</i> Jingjing Liu, Carla E. Brodley, Brian C. Healy, and Tanuja Chitnis
10:50 AM - 11:10 AM	Screening and Diagnosis <i>Automatic Patient Search Using Bernoulli Model</i> Yingying Gu, Christopher Kallas, Jun Zhang, James Marx, and Judy Tjoe
11:10 AM - 11:30 AM	Screening and Diagnosis <i>Early Diagnosis and Its Benefits in Sepsis Blood Purification Treatment</i> Mohamed Ghalwash, Vladan Radosavljevic, and Zoran Obradovic
11:30 AM - 11:50 AM	Data Properties and Management <i>Using Structured EHR Data and SVM to Support ICD-9-CM Coding</i> José Ferrão, Mónica D. Oliveira, Filipe Janela, and Henrique M. G. Martins
12:00 noon - 1:00 PM	Lunch
1:00 PM - 1:20 PM	Data Properties and Management <i>Impact of Density of Lab Data in EHR for Prediction of Potentially Preventable Events</i> Chandrima Sarkar and Jaideep Srivastava
1:20 PM: 1:40 PM	Data Properties and Management <i>Towards the Discovery of Diseases Related by Genes Using Vertex Similarity Measures</i> Hung-Hsuan Chen and C. Lee Giles

1:40 PM - 2:30 PM	<p>Invited Talk <i>When Bigger is not Better: Some Challenges in the Analysis of Big Data</i> <i>Speaker:</i> Dr. Robert Kaplan, National Institutes of Health</p>
2:30 PM - 3:00 PM	Coffee Break
3:00 PM to 4:15 PM	<p>Panel Discussion <i>Predictive Modeling in Healthcare: Challenges, Realities, and Opportunities</i> <i>Moderator:</i> Jaideep Srivastava, University of Minnesota <i>Panel Members:</i> Joydeep Ghosh, University of Texas at Austin Vipin Gopal, Humana Vasant Honavar, National Science Foundation/Iowa State University Robert Kaplan, National Institutes of Health Longjian Liu, Drexel University</p>
4:15 PM to 4:30 PM	Closing

The First Workshop on Mobile Cloud Computing in Healthcare (WMCCH 2013)

10:30 – 10:45 pm
Opening Remarks

10:45 – 12:00 pm
Improving Computational Efficiency for Personalized Medical Applications in Mobile Cloud Computing Environment
George Mathew and Zoran Obradovic
Finding Needles in a Haystack: Reducing False Alarm Rate Using Telemedicine Mobile Cloud
Qiong Gui, Bingwei Liu, Xiaoliang Wang, Zhanpeng Jin and Yu Chen
Mobile Application Concept Development for Remote Patient Monitoring
Ljilja Kascak, Claudia Rebola, Richard Braunstein and Jon Sanford

Workshop on Hospital Readmission Prediction and Clinical Risk Management (HRPCRM 2013)

1:00 – 1:45 pm
Keynote Speech

Readmissions: Models and More
Scott Zasadil, the Chief Scientist for UPMC Health Plan

1:45 – 2:30 pm

Why Majority of Readmission Risk Assessment Tools Fail in Practice

Matthew Tanzer and Eric Heil

A Predictive Model to Identify Patients at Risk of Unplanned 30-Day Acute Care Hospital Readmission

Klaus Lemke

A Method to Identify Potentially Preventable Readmissions for Historical Data

Matthew Lovejoy, David Claudio, and Kallie Kujawa

2:30 – 3:00 pm

Coffee Break

3:00 – 4:00 pm

Predictors of readmission in heart failure patients vary by cause of readmission

Alex Bottle, Paul Aylin and Derek Bell

Temporal Evaluation of Risk Factors for Acute Myocardial Infarction Readmissions

Gregor Stiglic, Adam Davey, Zoran Obradovic

Predictive and Prescriptive Analytics for Optimal Decisioning: Hospital Readmission Risk Mitigation

Thomas Hill, Vladimir Rastunkov, and John Cromwell

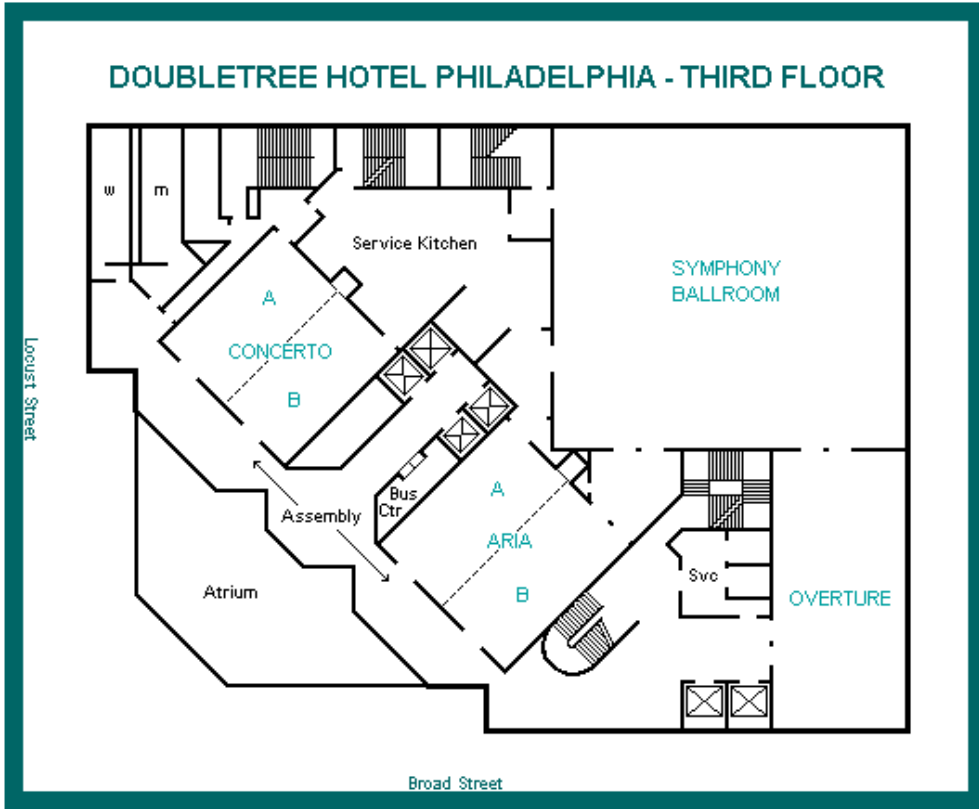
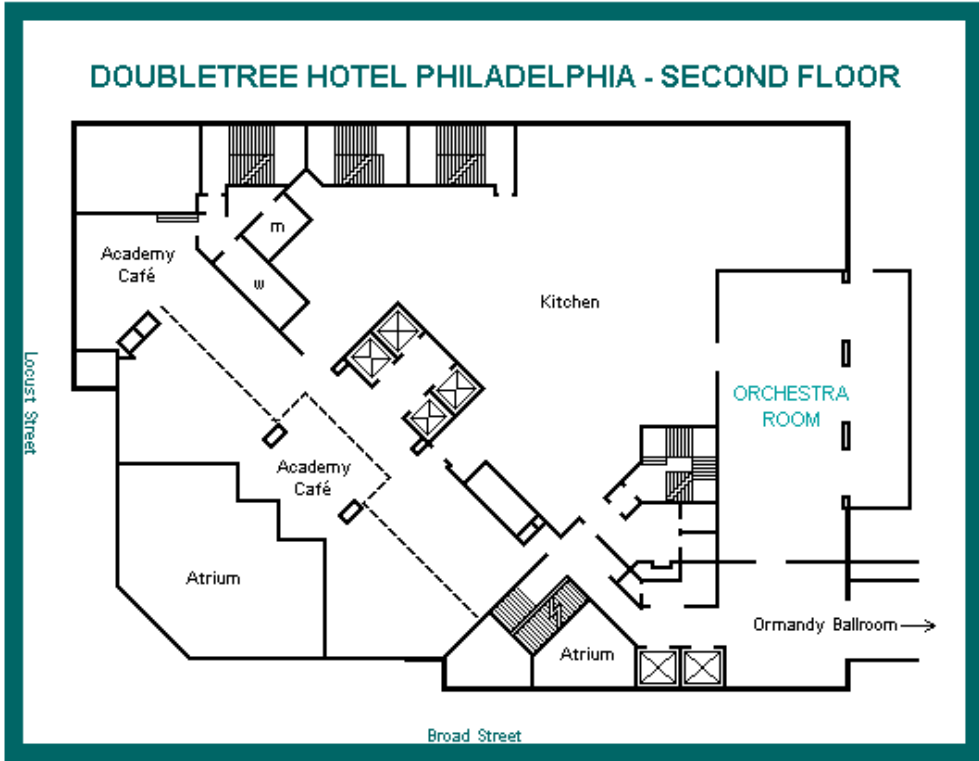
Rethinking Automation for Care Transitions

Matthew Tanzer and Eric Heil

4:00 – 4:30 pm

Panel Discussion

Hotel Floor Map



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