

# Chia-Fang (Christina) Chung

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## Research Interests

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Designing systems and services to support healthcare, wellness, and relationships  
Personal Informatics, Behavior Change, Ubiquitous Computing, Computer-Supported Cooperative Work

## Education

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**University of Washington, Seattle, USA** 2012 - Current

PhD Candidate, Human Centered Design & Engineering

Advisor: Sean Munson

**National Taiwan University, Taipei, Taiwan**

MBA, Information Management 2004 - 2006

Thesis: Design and Implementation of a Stateful High Speed Intrusion Detection System

Advisor: Yeali Sunny Sun

BBA, Information Management 2000 - 2004

## Research Experience

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**IBM T.J. Watson Research Center, Yorktown Heights, NY**

Research Intern, Computational Health Behavior & Decision Science Autumn 2015

Supervisor: Catalina Danis

Integrating Population-based Patterns with Personal Routine to Re-engage Fitbit Use

**University of Washington, Seattle**

Graduate Research Assistant, Human Centered Design & Engineering 2012 - Current

Supervisor: Sean Munson

Sharing lifelog data with healthcare providers and experts in clinical care (funded by AHRQ)

Adoption of blood pressure kiosks in clinical settings

TempFeel: Supporting remote relationships with temperature information sharing

Goal setting features in health and wellness applications

Graduate Research Assistant, Human Centered Design & Engineering 2012 - 2013

Supervisor: Keith Butler and Mark Haselkorn

Design and evaluate the evidenced-based method for health information technology (funded by AHRQ)

**IBM Research Collaboratory Taiwan**

2009 - 2012

**Care Coordination for Diabetes Management**

2012

Supervisor: Sreeram Ramakrishnan and Henry Chang

Architected and designed in-market experiments and system architecture to facilitate chronic disease management inside and outside hospital and improve clinical outcome

Conducted user study, system flow/process analysis of 2 area hospitals (2000+ beds) and 1 clinic group (7 clinics and 3 supporting hospitals) as well as experiment design

**Context-based Personal Wellness Management System**

2010 - 2012

Supervisor: Raymund Lin and Sreeram Ramakrishnan

Architected and integrated 3-party coaching service, exercise prescription and monitoring system to provide context-based exercise guiding service.

Performed user centered system design and conducted In-market experiment.

**Monitor as a Service: Highly scalable event processing service in the cloud**

2010 - 2011

Supervisor: Liangzhao Zeng

**Refereed Journal Articles**

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- J5 **Inter-Rater Reliability of Provider Interpretations of Irritable Bowel Syndrome Food and Symptom Journals** 2017  
Jasmine Zia, Chia-Fang Chung, Kaiyuan Xu, Yi Dong, Jeanette M. Schenk, Kevin Cain, Sean Munson, Margaret Heitkemper  
Journal of Clinical Medicine;6(11):105
- J4 **Should you always have a backup? One vs. Two Goals in Games** 2017  
Chia-Fang Chung and Sean A. Munson  
International Journal of Human-Computer Studies;108:32-40
- J3 **The Feasibility, Usability, and Perceived Clinical Utility of Traditional Paper Food and Symptom Journals for Patients with Irritable Bowel Syndrome** 2016  
Jasmine Zia, Chia-Fang Chung, Jessica Schroeder, Sean A. Munson, Julie A. Kientz, James Fogarty, Elizabeth Bales, Jeanette Schenk, Margaret Heitkemper  
Neurogastroenterology and Motility;28:25-26
- J2 **Implementation of a New Kiosk Technology for Blood Pressure Management in a Family Medicine Clinic: from the WWAMI region Practice and Research Network** 2016  
Chia-Fang Chung, Sean A. Munson, Matthew J. Thompson, Laura-Mae Baldwin, Jeffrey Kaplan, Randall Cline, Beverly B Green  
Journal of the American Board of Family Medicine 2016;29:620–629
- J1 **More Than Telemonitoring: Health Provider Use and Nonuse of Life-Log Data in Irritable Bowel Syndrome and Weight Management** 2015  
Chia-Fang Chung, Jonathan Cook, Elizabeth Bales, Jasmine Zia, Sean A. Munson  
Journal of Medical Internet Research 2015;17(8):e203

**Refereed Conference Papers with Proceedings**

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- c6 **Finding the Right Fit: Understanding Health Tracking in Workplace Wellness Programs** 2017  
Chia-Fang Chung, Nanna Gorm, Irina Shklovski, Sean A. Munson  
CHI 2017 (4875-4886). **Best Paper Honorable Mention (Top 5%)**
- c5 **When Personal Tracking Becomes Social: Examining the Use of Instagram for Healthy Eating** 2017  
Chia-Fang Chung, Elena Agapie, Jessica Schroeder, Sonali Mishra, James Fogarty, Sean A. Munson  
CHI 2017 (1674-1687).
- c4 **Supporting Patient-Provider Collaboration to Identify Individual Triggers using Food and Symptom Journals** 2017  
Jessica Schroeder, Jane Hoffswell, Chia-Fang Chung, James Fogarty, Sean Munson, Jasmine Zia  
CSCW 2017. (1726-1739).
- c3 **Integrating Population-based Patterns with Personal Routine to Re-engage Fitbit Use** 2016  
Chia-Fang Chung and Catalina M. Danis  
PervasiveHealth 2016 (154-161).
- c2 **Boundary Negotiating Artifacts in Personal Informatics: Patient-Provider Collaboration with Patient-Generated Data** 2016  
Chia-Fang Chung, Kristin Dew, Alison Cole, Jasmine Zia, James Fogarty, Julie A. Kientz, Sean A. Munson  
CSCW 2016 (770-786). **Best Paper Award (Top 1%)**

- c1 **GreenOlive: An open platform for wellness management ecosystem** 2010  
Liangzhao Zeng, Pei-Yue Hsueh, Henry Chang, Christina Chung, Rick Huang  
IEEE SOLI 2010 (88-93).

## Abstracts and Extended Abstracts

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- A8 **Supporting patient-provider communication and engagement with personal informatics data** 2017  
Chia-Fang Chung  
UbiComp/ISWC 2017 Doctoral Colloquium.
- A7 **The Feasibility, Usability and Perceived Clinical Utility of Traditional Paper Food and Symptom Journals for Patients with Irritable Bowel Syndrome** 2016  
Jasmine Zia, Chia-Fang Chung, Jessica Schroeder, Jeanette Schenk, Sean Munson, Julie Kientz, James Fogarty, Margaret Heitkemper  
The 2nd Federation of Neurogastroenterology & Motility Joint International Meeting (FNM 2016), San Francisco, CA.
- A6 **Flip the Clinic: Implementing Patient Self-measurement of Blood Pressure Using a Kiosk in a Clinic Waiting Room** 2016  
Beverly B. Green, Chia-Fang Chung, Laura-Mae Baldwin, Sean Munson, Matthew J. Thompson  
2016 American Society of Hypertension Annual Meeting, New York City
- A5 **Patient and Provider Goals and the Using Patient-Generated Data in IBS and Weight Management** 2016  
Chia-Fang Chung, Kristin Dew, Jonathan Cook, Elizabeth Bales, Alison Cole, Jasmine Zia, James Fogarty, Julie Kientz, Sean Munson  
Workshop on Interactive Systems in Healthcare (WISH), CHI 2016.
- A4 **Inter-rater Reliability of Healthcare Provider Interpretations of Food and Gastrointestinal Symptom Paper Diaries of Patients with Irritable Bowel Syndrome** 2016  
Jasmine Zia, Chia-Fang Chung, Kaiyuan Xu, Yi Dong, Kevin Cain, Sean Munson, Margaret Heitkemper  
2016 Digestive Disease Week, San Diego, CA.
- A3 **Patient and Provider Goals and Collaboration Process of Using Patient-Generated Data** 2016  
Chia-Fang Chung, Kristin Dew, Jonathan Cook, Elizabeth Bales, Alison Cole, Jasmine Zia, James Fogarty, Julie Kientz, Sean Munson  
Symposium on Use of Patient-Generated Data Beyond Self-Regulation. 2016 Conference of the International Society for Research on Internet Interventions (ISRII). Seattle, WA.
- A2 **Temperature Sharing to Support Remote Relationships** 2014  
Chia-Fang Chung, James Hwang, Sean Munson  
UbiComp Adjunct 2014 (27-30)
- A1 **Modeling Conceptual Work Products in a Multiple Sclerosis Clinic to Design a Superior User Interface** 2013  
Andrew Berry, Craig Harrington, Keith Butler, Melissa Braxton, Mark Haselkorn, Amy Walker, Mark Oberle, Chia-Fang Chung, Nikki Pete, W. Paul Nichol  
Workshop on Interactive Systems in Healthcare (WISH), AMIA 2013

## Workshop Papers

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- w4 **Supporting Patient-Provider Communication and Relationships with Personal Informatics Data** 2017  
Chia-Fang Chung, Jessica Schroeder, Jasmine Zia, James Fogarty, Julie A. Kientz, Sean A. Munson  
Workshop on Quantified Data and Social Relationship, CHI 2017

- w3 Evidence-based HealthIT for Patient-Provider Communication** 2013  
Keith Butler, Mark Haselkorn, Melissa Brazton, W. Paul Nichol, Andrew Berry, Chia-Fang Chung  
Workshop on Patient-Clinician Communication, CHI 2013
- w2 An Intervention Recommendation Engine Approach for Chronic Disease Management** 2012  
Christina CF Chung  
Technical session on CPMS, the practice section, INFORMS International 2012
- w1 Monitor as a Services: Highly scalable event management platform in a cloud environment** 2011  
Christina CF Chung, Rick TC Huang  
IBM Regional Technical Exchange 2011

## Media Coverage

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- m11 How the 'Instagram diet' works**  
Lisa Drayer. CNN. 11 August 2017  
<http://www.cnn.com/2017/08/11/health/instagram-diet-food-drayer/index.html>
- m10 Food photography a healthy habit for some**  
Ted Land. King 5 TV. 3 May 2017.  
<http://www.king5.com/news/local/food-photography-a-healthy-habit-for-some/436534037>
- m9 People Are Using Instagram as a Dieting Tool—And Maybe That's Not a Bad Thing**  
Caroline Cunningham. The Washingtonian. 2 May 2017  
<https://www.washingtonian.com/2017/05/02/people-are-using-instagram-as-a-dieting-tool-and-maybe-thats-not-a-bad-thing/>
- m8 Here's How Instagram Can Help You Eat Healthier**  
Alisa Hrustic. Men's Health. 28 April 2017  
<http://www.menshealth.com/nutrition/how-instagram-can-help-you-eat-healthier>
- m7 Instagram Food Photos Keep Dieters on Track**  
Jessica Friger. Newsweek. 27 April 2017  
<http://www.newsweek.com/food-diary-diet-instagram-social-media-591322>
- m6 Instagram may help users track food intake**  
Amy Wallace. UPI. 26 April 2017  
<http://www.upi.com/Instagram-may-help-users-track-food-intake/3741493225922/>
- m5 People turn to Instagram to eat healthier, UW study says**  
Madelaine VanDerHeyden. King 5. 27 April 2017.  
<http://www.king5.com/news/health/instagram-foodies-have-healthier-diets-study-says/434311750>
- m4 UW study finds food in your Instagram feed helps some users track and maintain healthy habits**  
Kurt Schlosser. GeekWire. 26 April 2017  
<http://www.geekwire.com/2017/uw-study-finds-food-instagram-feed-helps-users-track-maintain-healthy-habits/>
- m3 Could Posting Your Food Photos Help You Eat Healthier?**  
Jillian Kramer. Food & Wine. 27 April 2017  
<http://www.foodandwine.com/news/could-posting-your-food-photos-help-you-eat-healthier>.
- m2 Bridging Expectations Between Doctors and Patients When It Comes To Digital Data**  
Jennifer Wing. KNKX News for Seattle and the Northwest, 14 March 2016  
<http://knkx.org/post/bridging-expectations-between-doctors-and-patients-when-it-comes-digital-data>

**M1 UW paper addresses fitness app disconnect between providers and patients**

Aly Brady. The Daily, 11 March 2016

[http://www.dailyuw.com/news/article\\_dac52596-e743-11e5-a07d-9379d8ab7f7c.html](http://www.dailyuw.com/news/article_dac52596-e743-11e5-a07d-9379d8ab7f7c.html)

## Invited Talks

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- T3 When Personal Tracking Becomes Social: Examining the Use of Instagram for Healthy Eating** 2017  
Guest Lecture, Health Services 204, Communicating About Health: Current Issues and Perspectives  
**Video Interpretation Service Platform for Hearing-impaired People**
- T2 IBM Academy of Technology 2010 Academy Collaboration Conference** 2010
- T1 The 6<sup>th</sup> China Information Accessibility Forum, Beijing, China, November 2<sup>nd</sup> 2009** 2009

## Teaching Experience

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### Research Group Mentorship

- HCDE 496/596: Supporting Healthy Eating Data Generation & Sharing with Health Experts Autumn 2017
- HCDE 496/596: Patient-Provider Sharing of Consumer Lifelogs Spring 2015
- HCDE 496/596: Technology Support for Health & Wellness (Goal Setting) Autumn 2013 - Spring 2014
- HCDE 496/596: Technology Support for Health & Wellness (Temperature Sharing to Support Remote Relationship) Spring & Autumn 2013

### Individual Student Mentorship

- Qiaosi Wang (iSchool undergraduate student) Summer - Fall 2017
- Kaiyuan Xu (HCDE master student) Spring & Fall 2015
- Sayna Parsi (HCDE undergraduate student) Spring - Summer 2015

### Graduate Teaching Assistant, Human Centered Design & Engineering

- HCDE 310: Interactive System Design & Technology (Sean Munson) Autumn 2017
- HCDE 310: Interactive System Design & Technology (Sean Munson) Autumn 2016
- HCDE 310: Interactive System Design & Technology (Sean Munson) Autumn 2014
- HCDE 310: Interactive System Design & Technology (Sean Munson) Autumn 2013
- HCDE 310: Communication Design & Technology (Sean Munson) Autumn 2012

## Work Experience

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### IBM Greater China Developer Lab, Taipei, Taiwan

#### iConnect: Mobile Location-based Assistant for Deaf Community 2011 - 2012

Chief Architect, User Experience Researcher and Team Leader (4 team members)

Architected, designed and implemented server platform and mobile app to facilitate task distribution among sign-language interpreters and to help deaf users locate interpreters nearby

*This project won the IBM Centennial Grant Award for Community Service*

#### Video Interpretation Service Platform for Hearing-impaired People 2009 - 2010

Chief Architect, Chief Programmer and User Experience Researcher

Architected, performed user centered design, and implemented an integrated platform on mobile devices to help deaf people communicate with others via interpretation service

Established the first video interpretation center in Asia and successfully supported Summer Deaflympics 2009, Taipei

*Adopted by Taipei City Government and served deaf communities in Taiwan since 2009*

2008

### Intelligent Receptionist: next generation smart banking teller system

Chief Architect, Project Lead and Chief Programmer

Developed an integrated personal financial service system to promote service quality and sale

*Deployed and in production in more than 200 branches of one major bank in Taiwan*

### IBM RFID Asset Management System

2006 - 2007

Chief Programmer

Designed and implemented mobile asset management client, RFID reader agent, and database

*Deployed and in production in IBM China Development Lab since 2007*

## Patents

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### Lifestyle progression models for use in preventative care

2012

Matthew Chen, Christina Chung, Rick Huang, June-Ray Lin, Ya-Fen Yeh, Xinxin Zhu

United States Patent 20140188507

### Health Management Application Development and Deployment Framework

2010

Hung-Yang Chang, Chia-Fang Chung, Pei-Yun Sabrina Hsueh, Tsung-Chi Huang, Liangzhao Zeng

United States Patent 20120046966A1

## Awards

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CHI 2017 Best Paper Honorable Mention

2017

Consortium for the Science of Sociotechnical System (CSST) 2016 Summer Institute Travel Fund

2016

CHI 2016 Workshop on Interactive Systems in Healthcare (WISH) Travel Fund

2016

CRA-W Graduate Cohort Travel Fund

2016

CSCW 2016 Best Paper Award

2016

Ubicomp 2014 Broadening Participation Workshop Travel Fund

2014

Shobe Prize Finalist

2014

IBM Team Award (Supporting iConnect project to win the IBM Centennial Grant)

2011

IBM First Patent Application Invention Achievement Award

2010

IBM Award of Distinction (Volunteering to Chinese Deaf Association and supporting the 21st Summer

2009

Deaflympics Taipei)

## Community Services

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**Student Coordinator.** DUB Doctoral Consortium

2017

**Student Coordinator.** DUB Seminar

2016 - Now

**Volunteer Mentor.** UW Dream Project College Admission Workshop

2016

**Reviewer.** CHI (2014-2018), Ubicomp (2014, 2016), CSCW (2014-2018), MobileHCI (2015-2016),

2014 - 2016

PervasiveHealth (2016-2017), IMWUT, JMIR, CACM.

**Student Volunteer.** CSCW 2017 (Portland), CHI 2014 (Toronto), UbiComp 2014 (Seattle), SIGDOC

2012 - 2014

2012 (Seattle)

**Volunteer Mentor.** Community Data Science Workshop

2014

**Co-Founder.** Mobile technology Community in IBM China Development Lab, Taipei

2010 - 2011

**Volunteer.** Chinese Deaf Association and support Summer Deaflympics

2009

**Volunteer.** IBM Engineering Weeks

2007 - 2011

**Mentor.** IBM Summer Interns and Women in Technology Group

2006 - 2011