Artificial Intelligence and the Next Generation User Experience Workshop

人工智能与新一代的用户体验华为论坛

2018 April 22st Montreal

Co-located with CHI 2018, collaborated with ICACHI

AI is the New UI

Introduction

Montreal is the new Silicon Valley of AI and CHI 2018 is the Top-tier conference in Human Computer Interaction. *Artificial Intelligence and the Next Generation User Experience Workshop* provides a great opportunity for both AI and HCI communities to discuss how technology can impacts our lives. This event will invite both local and international researchers and from both communities to share and discuss their visions and research results.

- The workshop deliberations will be on (not limited to) the following themes:
- UI design principle for intelligent systems
- Crowd sourcing
- Computer vision
- Natural language understanding and conversational user interface
- Intention-based UI
- Ubiquitous computing
- AI for UI design

The Trend: "AI is the New UI" --Accenture

Human-centered machine learning --Google

Human machine inference networks --IBM

Ubiety Computing - Microsoft

Optimizing for User Experience with Machine Learning – keynote

Abstract: Understanding users and optimizing for user experience are critical parts of building successful apps and services. While there had been a tremendous amount of past work studying user and social interactions, in practice, it wasn't until quite recently that researchers are able to optimize these interaction surfaces easily. In this talk, I will illustrate ML-driven approaches to optimize for happy engaged users. Specifically, I will present examples of how we utilize novel machine learning techniques to optimize for long-term user engagements in practice.

Bio: Ed H. Chi is a Principal Scientist at Google, leading a machine learning research team focused on recommendation systems, machine learning, and social computing research. He has launched significant improvements of recommenders for YouTube, Google Play Store and Google+. With 39 patents and over 110 research articles, he is known for research on Web and online social systems, and the effects of social signals on user behavior. Prior to Google, he was the Area Manager and a Principal Scientist at Palo Alto Research Center's Augmented Social Cognition Group. Ed completed his three degrees (B.S., M.S., and Ph.D.) in 6.5 years from University of Minnesota. Recognized as an ACM Distinguished Scientist and elected into the CHI Academy, he has been featured and quoted in the press, including the Economist, Time Magazine, LA Times, and the Associated Press.

Ed H. Chi

Google

Interactive computer vision: Exploiting meaningful interaction in computer vision applications – keynote

Abstract: A dark secret in the computer vision and image processing research community is the heavy reliance on "magic numbers" by our algorithms. Magic numbers often manifest themselves as algorithmic parameters that must be tuned before satisfactory results can be obtained. This over reliance on parameter tuning stems, in part, from the long-standing dogma that computer vision algorithms should be fully automated. Interestingly, requiring the user to tune parameters, most of which have no intuitive meaning to the task at hand, is far from automatic – in fact, it is a major stumbling block when building real world computer vision applications. In this talk, I will advocate that for many computer vision and image processing applications magic numbers can be avoided if we instead exploit the user's help via meaningful interaction. This approach to solving problems has been termed "interactive computer vision" and has proven effective in many tasks such as segmentation, matting, and image repair. Specifically, I'll discuss several examples from our own research that have transformed problems either too difficult to automate or heavily reliant on parameter tuning into applications that now rely only on simple, and easy to understand, interaction supplied by the user.

Michael Brown
York University

Michael S. Brown obtained his BS and PhD in Computer Science from the University of Kentucky in 1995 and 2001 respectively. He is currently a professor at York University in Canada. Dr. Brown has served as an area chair multiple times for CVPR, ICCV, ECCV, and ACCV and is currently an associate editor for the IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI) and the International Journal of Computer Vision (IJCV). His research interests including computer vision, image processing, and computer graphics.

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Deep AI for Multimedia and Assistive Technology – invited talk

Prof. Pal is Canada NSERC Industry Research Chair on Deep AI for Multimedia and Assistive Technology. Chris is well known for his work at the intersection of computer vision and pattern recognition, machine learning, artificial intelligence and human computer interaction. He is the co-author of the 4th edition of the well-known book "Data Mining: Practical Machine Learning Tools and Techniques" which has received over 30,000 citations over all the editions of the book. His research articles have been cited over 3200 times according to Google Scholar and Semantic Scholar. He has given numerous invited talks for organizations such as: Microsoft Research, Google Research, IBM Research, Amazon Research and the Bill and Melinda Gates Foundation.

Prof. Pal has been the co-organizer of the Large Scale Movie Description Challenge held at the conferences ICCV 2015, ECCV 2016 and ICCV 2017. Prof. Pal is one of the founding members of the Montreal Institute for Learning Algorithms (MILA). The MILA is widely recognized as a world leading research Institute focusing on Deep Learning. MILA实验室资深教授以深度学习，包括视频分析、视频自然语言描述，自然语言处理、人机交互等领域为主要研究方向。

Christopher Pal
MILA

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Sensing and Interaction – invited talk

Khai is an Associate Professor in the Department of Computer Science at the University of Toronto. His research interests are in human-computer interaction (HCI) and ubiquitous computing (Ubicomp). He investigates *tools and methods to support the development of novel ubiquitous computing systems* and *techniques and models to facilitate user interactions with off-the-desktop computing devices and services*. Khai was the conference co-chair of Ubicomp2017.

Khai Truong

University of Toronto

Task-based Dialogue System and Conversational UI – Invited Talk

Dr. Layla Asri is a Research Manager at Microsoft Research Maluuba, Montréal. The goal of Maluuba is to teach machines to think, reason, and communicate. Before joining Maluuba in 2016, she completed her PhD in computer science at Université de Lorraine in France. Her research focused on learning the parameters of reinforcement learning for dialogue systems. She proposed novel methods to learn a reward function from a set of dialogues which were rated by humans. She also worked on learning an interpretable representation of the state space before joined Maluuba in 2016 as a research scientist and worked on user simulation. She then became a team lead and led the data collection for a goal-oriented dialogue dataset. Layla joined Microsoft as a research manager and have been leading a team focused on dialogue research. The team works on advancing the state-of-the-art as well as improving Microsoft products with dialogue capabilities.

Layla's main interests are currently: the evaluation of dialogue systems, offline reinforcement learning on human-human dialogues, and visual dialogue.

Visual Art and Computer Graphics for UX – invited talk

Dan is a HCI professor from University of Waterloo. Prof. Vogel's research focuses on human-computer interaction in combination with computer graphics and visual art in the pursuit of developing better experiences for people using computers.

Input and interaction techniques change significantly as computing moves off of the desktop, onto our laps, into our pockets, and now, spreading throughout our environment. The increase in display area on surfaces like tables and walls, combined with contextual access, enable new experiences — but only when input, interaction, and visualization are tailored to human capabilities.

Dan Vogel

University of Waterloo

Computational Interaction in Post-PC Computing – invited talk

In the current Post-PC computing era, new technologies such as mobile computing, wearable computing, augmented and virtual reality have emerged, which bring wicked challenges to interaction between humans and information technology. To address these challenges, designers must consider a multiplicity of problems from low-level hardware, through software, all the way to human factors. In this talk I will introduce a new perspective on how to design user interfaces and interaction technology: *Computational Interaction*, which is an approach that focuses on the use of algorithms and mathematical models to explain and enhance interaction between humans and information technology. I will particularly introduce how to apply this approach to address problems of text-based communication on mobile devices, and touchscreen interface design.

Xiaojun Bi is an Assistant Professor of Computer Science at Stony Brook University. Previously, he was a Research Scientist at Google. His research interests center on Human-Computer Interaction (HCI), with the major focus on computational interaction in Post-PC computing. He earned his Ph.D. from the Department of Computer Science at the University of Toronto, and Master's and Bachelor's degrees from Tsinghua University, China. Xiaojun Bi has over 30 publications in top tier HCI conferences and journals including *ACM CHI*, *UIST* and *Human Computer Interaction*, and is an inventor of over 20 US patents. He is also a 2-time Google Faculty Research Award winner (2017, 2018), and a co-author and co-editor of the recently published book *Computational Interaction*.

Xiaojun Bi
Stony
Brook
University

Novel Augmentations for Mobile and Wearable Devices – invited talk

Xing-dong Yang is an assistant Professor of Computer Science at Dartmouth College, Hanover, NH. His research interests span a wide spectrum of topics in human-computer interaction (HCI), with a specific emphasis on developing input technologies, novel interaction techniques, and novel augmentations for mobile and wearable devices. Xing-dong received his Ph.D. in Computer Science from the University of Alberta, Canada in 2013. His dissertation work was awarded the **2013 Bill Buxton Best Canadian HCI Dissertation Award**

Xing-dong Yang
Dartmouth

Panel Discussion – AI for the next generation UI

Panel Chair: Sheng-dong Zhao
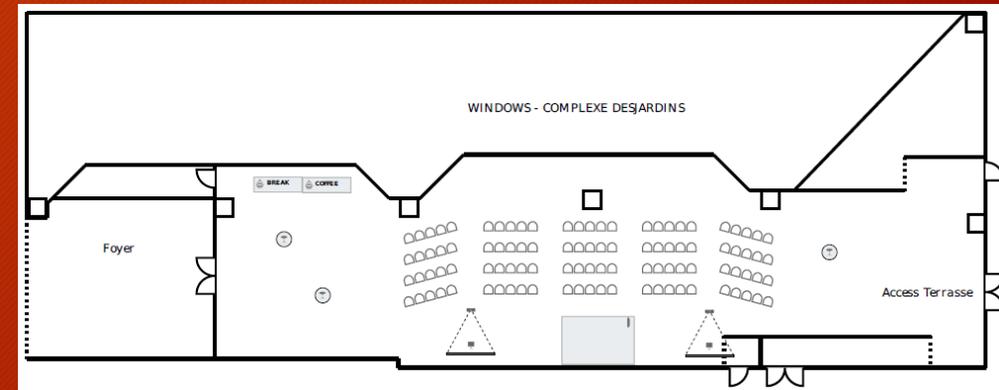National University of
Singapore

Preliminary Program

Morning Session

- 7:30-8:30 Registration and Morning Coffee
- 8:45-9:45 Opening Keynote
- 9:45-10:30 Invited Talk 1
- 10:30-10:45 Coffee Break
- 10:45-11:30 Invited Talk 2
- 11:30-12:15 Invited Talk 3
- 12:15-1:30 Lunch Break

Afternoon Session

- 1:30-2:15 Panel Discussion
- 2:15-3:00 Invited Talk 4
- 3:00-3:15 Coffee Break
- 3:15-4:00 Invited Talk 5
- 4:00-4:45 Invited Talk 6
- 4:45-5:45 Closing Keynote
- 6:30-8:30 Dinner

Workshop Location: *Inspiration Room*, Hyatt Regency, Montreal

Dinner Location:
Saveur Room (same floor, same hotel)

WINDOWS - COMPLEXE DESJARDINS

BREAK   COFFEE

Foyer

Access Terrasse

Thank You!