KRISTWONGSUPHASAWAT

Curriculum Vitae

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Biography

Krist Wongsuphasawat is a doctoral student in the Department of Computer Science at the University of Maryland, College Park. His advisor is Dr. Ben Shneiderman. He is also working as a research assistant at the Human-Computer Interaction Lab (HCIL). Krist received Master degree in Computer Science from University of Maryland in 2009 and Bachelor degree in Computer Engineering from Chulalongkorn University, Bangkok, Thailand in 2007. His research interests include information visualization, visual analytics and human-computer interaction.

Education

Jun 2012 (expected)	**Ph.D. in Computer Science** University of Maryland, College Park, MD USA Advisor : Ben Shneiderman
May 2009	**Master of Science in Computer Science** University of Maryland, College Park, MD USA GPA 3.90/4.00
Mar 2007	**Bachelor of Engineering (Computer Engineering Major)** Chulalongkorn University, Bangkok, THAILAND GPA 3.96/4.00 (First Class Honor)

Research Experience

Jan 2009 – Present	Research Assistant at **Human-Computer Interaction Laboratory (HCIL)** University of Maryland, College Park, MD, USA Designed and developed LifeFlow and Similan, interactive visualization techniques for analyzing temporal event sequences.
Jun 2011 – Aug 2011	Research Intern at **IBM T.J. Watson Research Center** Hawthorne, NY, USA Develop Outflow, a visualization technique for understanding patient flow by symptoms and outcome.
Jun 2010 – Aug 2010	Research Intern at **Microsoft Research** Redmond, WA, USA Develop ActiveText, a framework for knowledge extraction, organization and discovery, which combines natural language processing, user interface design and information visualization techniques.
May 2008 – Dec 2008	Research Assistant at **Center for Advanced Transportation Technology (CATT) Laboratory** University of Maryland, College Park, MD, USA Develop Incidents Clustering Explorer (ICE), a visualization tool for supporting traffic engineers in analyzing traffic incident data called Incidents Clustering Explorer (ICE).

Working Experience

Mar 2007 – Jun 2007	System Analyst at **ITOne Co., Ltd.** Bangkok, Thailand SAP WM (Warehouse Management) deployment at HomePro Distribution Center, Wang Noi, Ayuddhaya, Thailand. Develop a chart generator program for CRM Application Management Team.
Mar 2006 – May 2006	Software Developer Intern at **The Stock Exchange of Thailand (SET)** Bangkok, Thailand Develop a caching system for settrade.com, a stock trading website. Develop a simulator for calculating derivatives margin according to the Thailand Future Exchange (TFEX) policy.

Teaching Experience

Aug 2007 – May2008	Teaching Assistant at **University of Maryland, College Park, MD** College Park, MD, USA Object-Oriented Programming I (CMSC131) with Fawzi Emad and Jandelyn Plane

Publications

Conference and Journal Papers (Refereed)

[C.12] Cui Tao, Krist Wongsuphasawat, Kim Clark, Catherine Plaisant, Ben Shneiderman and Christopher G. Chute. ***Towards Event Sequence Representation, Reasoning, and Visualization for EHR Data.*** in Proc. ACM SIGHIT International Health Informatics Symposium (IHI), 2012.

[C.11] Krist Wongsuphasawat and David H. Gotz. ***Outflow: Visualizing Patients Flow by Symptoms and Outcome.*** in Proc. Workshop on Visual Analytics in Healthcare (VAHC) in conjunction with IEEE VisWeek 2011.

[C.10] Jae-wook Ahn, Peter Peter Brusilovsky and Krist Wongsuphasawat. ***Analyzing User Behavior Patterns in Adaptive Exploratory Search Systems with LifeFlow.*** in Proc. Workshop on Human-Computer Interaction and Information Retrieval (HCIR) 2011.

[C.9] Tom Yeh, Tsung-Hsiang Chang, Bo Xie, Greg Walsh, Ivan Watkins, Krist Wongsuphasawat, Man Huang, Larry S. Davis and Benjamin B. Bederson. ***Creating Contextual Help for GUIs Using Screenshots.*** in Proc. ACM Symposium on User Interface Software and Technology (UIST), 2011

[C.8] Krist Wongsuphasawat, John Alexis Guerra Gómez, Catherine Plaisant, Taowei David Wang, Meirav Taieb-Maimon and Ben Shneiderman. ***LifeFlow: Visualizing an Overview of Event Sequences.*** in Proc. ACM SIGCHI Conference on Human Factors in Computing (CHI), 2011.

[C.7] John Alexis Guerra Gomez, Krist Wongsuphasawat, Taowei David Wang, Michael L. Pack and Catherine Plaisant. ***Analyzing Incident Management Event Sequences with Interactive Visualization.*** in Transportation Research Board 90th Annual Meeting Compendium of Papers, 2011.

[C.6] Taowei David Wang, Krist Wongsuphasawat, Catherine Plaisant and Ben Shneiderman. ***Visual Information Seeking in Multiple Electronic Health Records: Design Recommendations and A Process Model.*** in Proc. of the 1st ACM International Informatics Symposium (IHI '10), pp. 46-55., 2010.

[C.5] Krist Wongsuphasawat, Pornpat Artornsumbudh, Bao Nguyen and Justin McCann. ***Network Stack Diagnosis and Visualization Tool.*** in Proc. ACM Symposium on Computer-Human Interaction for Management of Information Technology (CHIMIT), 2009.

[C.4] Taowei David Wang, Krist Wongsuphasawat, Catherine Plaisant and Ben Shneiderman. ***Exploratory search over temporal event sequences: Novel requirements, operations, and a process model.*** in Proc. 3rd Workshop on Human-Computer Information Retrieval, 2009.

[C.3] Krist Wongsuphasawat and Ben Shneiderman. ***Finding Comparable Patient Histories: A Similarity Measure with an Interactive Visualization.*** in Proc. IEEE Symposium on Visual Analytics Science and Technology

(VAST), 2009.

[C.2] Michael Pack, Krist Wongsuphasawat, Michael VanDaniker and Darya Filippova. ***ICE--Visual Analytics for Transportation Incident Datasets.*** in Proc. IEEE International Conference on Information Reuse and Integration (IEEE IRI), 2009.

[C.1] Krist Wongsuphasawat, Darya Filippova, Michael VanDaniker, Michael Pack and Andreea Olea. ***Visual Analytics for Transportation Incident Datasets.*** in Transportation Research Record: Journal of the Transportation Research Board. Vol. 2138, pp. 135-145, 2009.

*This paper won Greg Harrington Award for Excellence in Visualization Research

Demo, Posters and Talks

[D.6] Krist Wongsuphasawat. ***Information Visualization for Health Care.*** University of Maryland University College (UMUC) Online Course. (Guest Lecture)

[D.5] Krist Wongsuphasawat, John Alexis Guerra Gómez, Hsueh-Chien Chen, Aaron Zach Hettinger, Catherine Plaisant and Ben Shneiderman. ***LifeFlow: Understanding Millions of Event Sequences in a Million Pixels***. 28th Annual Human-Computer Interaction Lab Symposium. University of Maryland, College Park, MD. May 2011. (Talk)

[D.4] Krist Wongsuphasawat, Taowei David Wang, Catherine Plaisant and Ben Shneiderman. ***Finding Patterns in Temporal Data***. 27th Annual Human-Computer Interaction Lab Symposium. University of Maryland, College Park, MD. May 2010. (Talk)

[D.3] Krist Wongsuphasawat, Catherine Plaisant and Ben Shneiderman. ***Similan: Finding Similar Temporal Categorical Records***. 26th Annual Human-Computer Interaction Lab Symposium. University of Maryland, College Park, MD. May 2009. (Poster & Demo)

[D.2] Krist Wongsuphasawat. ***Visual Analytics for Transportation Incident Datasets***. World Usability Day: The Two-Way Street: People adapting to transportation and transportation adapting to people. Washington, DC, November 2008. (Poster & Demo)

[D.1] Darya Filippova, Joonghoon Lee, Andreea Olea, Michael VanDaniker and Krist Wongsuphasawat. ***Exploring Clusters in Geospatial Datasets***. 25th Annual Human-Computer Interaction Lab Symposium. University of Maryland, College Park, MD, May 2008. (Poster & Demo)

Awards

2009	Greg Harrington Award for Excellence in Visualization Research from the National Academy of Sciences Transportation Research Board (TRB) **for the Paper entitled "Visual Analytics for Transportation Incident Datasets" [C.1]**
2007-2008	University of Maryland Graduate Fellowship **for outstanding academic record**
2006	2nd Runner-Up in World RoboCup 2006, Bremen, Germany **International Robot Soccer Competition**
2006	Winner of RoboCup Thailand Championship 2006 **National Robot Soccer Competition**
2005	Thailand Representative in World RoboCup 2005, Osaka, Japan **International Robot Soccer Competition**
2004	Winner of "Information" Awards in DTAC & Nokia iAwards **National Mobile Applications Contest**
2001	Winner of "Webroon.com" Contest held by CS Internet **National Web Design Contest**

Affiliations

+ Association of Computing Machinery (ACM) - http://www.acm.org

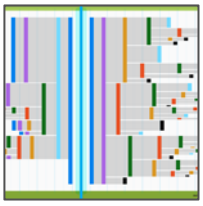
Certificates

+ Microsoft Certified Application Developer (MCAD)
+ Microsoft Certified Professional (MCP)
+ Thailand Information Technology Engineers Examinations (ITEE)

Selected Projects

LifeFlow [Java] (2009 - Present)

Human-Computer Interaction Laboratory (HCIL), University of Maryland



Event sequence analysis is an important task in many domains: medical researchers study the patterns of transfers within the hospital for quality control; transportation experts study accident logs to identify best practices. In most cases they deal with more than thousands of records. While previous research has focused on searching and browsing, overview tasks are often overlooked. I developed a novel interactive visual overview of event sequences called *LifeFlow*. LifeFlow is scalable, can summarize all possible sequences, and highlight the temporal spacing of the events within sequences. http://www.cs.umd.edu/hcil/lifeflow

This project is in collaboration with:

- Washington Hospital Center, Washington, DC
- Oracle Health Sciences Global Business Unit (HSGBU)
- Mayo Clinic College of Medicine
- University of Pennsylvania School of Nursing
- Center for Advanced Transportation Technology Lab (CATT Lab), University of Maryland

Similan [C#, Adobe Flex] (2008 - Present)

Human-Computer Interaction Laboratory (HCIL), University of Maryland

Finding similar patients within millions of Electronic Health Records (EHRs) is a challenging problem. Many methods for computing a similarity measure between time series have been proposed, but patient history with event sequences requires fresh thinking. To address this problem, we proposed a similarity measure for event sequences called the M&M measure and implemented Similan, an interactive tool for database search and results visualization. http://www.cs.umd.edu/hcil/similan

ICE: Incidents Clustering Explorer [Adobe Flex] (2008)

Center for Advanced Transportation Technology Laboratory (CATT Lab), University of Maryland

Transportation systems are being monitored at an unprecedented scope which is resulting in tremendously detailed traffic and incident databases. While the transportation community emphasizes developing standards for storing this incident data, little effort has been made to design appropriate visual analytics tools to explore the data, extract meaningful knowledge, and represent results. A novel, web-based, visual analytics tool called ICE (Incidents Clustering Explorer) is proposed as an application that affords sophisticated yet user-friendly analysis of transportation incident datasets. Multiple visualizations are integrated together to allow users to simultaneously interact with and see relationships between different views of data.

HeapX: Visualization Tool for Heap Profiler [Adobe Flex] (2008)

Course Project, University of Maryland

Heap memory profiling is crucial in tuning parallel computing performance. We introduce a heap memory profiling and visualization suite, Libmassif and HeapX. Libmassif is a generalized API extension of Massif, a memory profiling tool for Valgrind. Libmassif overcomes limitations of Massif and also supports other DBIs. HeapX is an interactive visualization tool for investigating the memory profile that allows analysts to explore the data interactively and fully benefits from the feature of Libmassif data.

Speech Preparation and Synthesis Application for Thai Language [C#, C++] (2006 - 2007)

Senior Project, Chulalongkorn University

An application that can synthesize speech whose voice quality contains the signature characteristics of a chosen target person. The primary purpose is to create these special sounds without their original speakers. Moreover, we intend to reduce time needed for sampling and emphasize the completeness and user-friendliness of the application.

PlasmaZV: Vision system for Plasma-Z RoboCup Soccer team [C++] (2005 - 2006)

Plasma-Z Robocup Soccer Team, Chulalongkorn University

A vision system which receives image stream from high frame-rate (60fps) camera and find the positions and orientations of robots in soccer field from each frame accurately and efficiently. It also provides user interfaces to adjust parameters for the detection system and camera calibration.

E-Zzz Poll: Survey through cellphone system [PHP, JavaScript] (2004 - 2005)

DTAC & Nokia iAwards Winner

Cellphone provides a new way to connect people. Based on this idea, we developed a system that distributes and collects surveys through cellphones. It can reach the participants wherever they are and provide real-time results. The users can create their surveys using our web-based tool.