

Chi-Hsien (Eric) Yen

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Education

- 08/2014 – 05/2020 **PhD in Computer Science**, *University of Illinois at Urbana-Champaign*, IL.
(expected) GPA: 3.97/4.00, Thesis Topic: Assisting Causal Inference in Visual Analytics
- 09/2009 – 06/2013 **BS in Electrical Engineering**, *National Taiwan University*, Taiwan.
GPA: 3.97/4.00, Class Ranking: 15/204 (7%), Cloud Computing Program
3 times Dean's List (top 5% students in a department)

Skills

- Programming/Scripts **Python, Javascript, D3.js, HTML/CSS, SQL, R, C++, L^AT_EX**
- Quantitative Methods **Hypothesis Testing, Regressions**, Machine Learning, Bayesian Analysis
- Qualitative Methods **A/B Testing, Experimental Design, Interviews/Survey**, Data Visualization (Tableau)
- Graduate Courses Machine Learning, Artificial Intelligence, Computer Vision, Data Mining, Database, Digital Image Processing, User Interface Design, Human-Computer Interaction

Work Experience

- 08/2014 – present **Graduate Research Assistant**, CASCADE LAB, UIUC.
Research Area: Visual Data Analytics, Human-Computer Interaction. Advisor: Dr. Wai-Tat Fu
Visual Analytics System for Causal Inference
- Design and implement a web-based data visualization system that 1) automatically detects important data patterns and 2) recommends key visualizations with interpretation-aiding hints.
 - Conduct user studies to show that how well people use visualizations to infer causal relationships could be influenced by data causal model, individual strategies, and interface features.
 - Automatically applied logistic and linear regressions to perform mediation analysis in the system. Utilized hypothesis testings to analyze participants' behavior.
- Funding-allocation Mechanisms on Charitable Crowdfunding Platform**
- Designed a funding-allocation mechanism and a new donating interface that could increase overall crowdfunding campaign success rate (by 30% if donors express their preferences to 3+ campaigns while donating).
 - Conducted user studies and used both qualitative and quantitative methods to demonstrate the improved success rate in the platform and the more desirable attributes in donor behavior.
 - Applied Decision Tree, Random Forest, and Naive Bayes to predict the amount of money a crowdfunding campaign raises. The models are used to help campaign creators improve their campaigns.
- 05/2017 – 08/2017 **Data Analytics Intern**, UNITED AIRLINES, Chicago, USA.
- Implemented a real-time flight information dashboard with customized visualizations, showing critical information that was originally from 4+ sources to facilitate decision-making during flight diversions.
 - Adopted agile development and participatory design approach to build the dashboard. Closely collaborated with flight dispatchers, airport operators, and data analysts.
- 01/2013 – 07/2014 **Undergraduate Research Assistant**, UBICOMP LAB, NTU, Chicago, USA.
Research Area: Ubiquitous Computing, Human-Computer Interaction. Advisor: Dr. Hao-Hua Chu.
- Designed a web-based visualization interface for user behavior monitoring and analysis. Collaborated with researchers, therapists, and visual designers to help alcohol-dependent patients maintain sobriety.
 - Utilized 3D printing with flexible materials for the rapid prototyping of BioScope, a small bandage-like extensible sensing system that assists caregivers in collecting 4 or more crucial bio-signals.
- 02/2012 – 08/2012 **Research and Development Intern**, TREND MICRO INC., Taipei, Taiwan.
- Adapted clustering algorithms to develop a software tool that automatically analyzes network packet flows and suggests possible application identification rules based on packet lengths.

Publications

- 2019 **Chi-Hsien Yen**, Aditya Parameswaran, Wai-Tat Fu. "An Exploratory User Study of Visual Causality Analysis." *Computer Graphics Forum (Proc. EuroVis)*, 2019
- 2019 **Chi-Hsien Yen**, Wai-Tat Fu. "Intelligent Assistants for Mediation Analysis in Visual Analytics." 24th International Conference on Intelligent User Interfaces. ACM (IUI), 2019.
- 2018 **Chi-Hsien Yen***, Yi-Chieh Lee*, and Wai-Tat Fu. "Visible Hearts, Visible Hands: A Smart Crowd Donation Platform." 23rd International Conference on Intelligent User Interfaces. ACM (IUI), 2018
- 2017 **Chi-Hsien Yen**, Yi-Chieh Lee, and Wai-Tat Fu. "Improving the Efficiency of Allocating Crowd Donations with Agent-Based Simulation Model." *International Conference on Social Computing, Behavioral-Cultural Modeling and Prediction and Behavior Representation in Modeling and Simulation*. Springer, Cham
- 2016 **Chi-Hsien Yen***, Yi-Chieh Lee*, and Wai-Tat Fu, "Improving donation distribution for crowdfunding: an agent-based model." *International Conference on Social Computing, Behavioral-Cultural Modeling and Prediction and Behavior Representation in Modeling and Simulation*. Springer, Cham
- 2015 **Chi-Hsien Yen**, Chen-Yu Hsu, and Chun-Ting Chou, "An Adaptive Multichannel Protocol for Large-Scale Machine-to-Machine (M2M) Networks," *Wireless Communications and Mobile Computing* 15.6: 1015- 1025.
- 2014 Cheng-Yuan Li, **Chi-Hsien Yen**, Kuo-Cheng Wang, Chuang-Wen You, Seng-Yong Lau, Cheryl Chia-Hui Chen, Polly Huang, Hao-Hua Chu, "BioScope: an extensible bandage system for facilitating data collection in nursing assessments," in *Proceeding of the 2014 ACM International Joint Conference on Pervasive and Ubiquitous Computing, (UbiComp'2014)*, Seattle, USA, September 2014
- 2014 Kuo-Cheng Wang, Yi-Hsuan Hsieh, **Chi-Hsien Yen**, Chuang-Wen You, Ming-Chyi Huang, Chao-Hui Lee, Seng- Yong Lau, Hsin-Liu (Cindy) Kao, Hao-Hua Chu, Ming-Syan Chen, "SoberDiary: A Phone-based Support System for Assisting Recovery from Alcohol Dependence," in *Proceeding of the 2014 ACM International Joint Conference on Pervasive and Ubiquitous Computing: Adjunct Publication, (UbiComp'2014 Adjunct)*, Seattle, USA, September 2014
- 2013 Chen-Yu Hsu, **Chi-Hsien Yen**, and Chun-Ting Chou, "An Adaptive Multichannel Protocol for Large-Scale Machine-to-Machine (M2M) Networks," in *Proceeding of the 9th International Wireless Communications and Mobile Computing Conference (IWCMC'2013)*, Sardinia, Italy
[* co-first authors]

HONORS/AWARDS

- 2015 **First Prize**, *NASA JPL Team Space Design Competition*, UIUC.
- 2014 – 2015 **Study Abroad Scholarship**, *Ministry of Education*, Taiwan.
- 2014 **Computer Science Excellence Fellowship**, *Computer Science Department*, UIUC.
- 2013 **Third Prize**, *NTUEE Undergraduate Outstanding Reports of Special Projects*, Taiwan.
- 2012 **Gold Medal Award**, *Innovative Asia Altera Design Contest 2012*, Xiamen,
First prize among 412 teams from Taiwan and China in the most prestigious FPGA design competition. Prize-winning project "T-shirt Design and Try-On System": an FPGA application that simulates T-shirt try-on result vividly in real-time. Users could also design their own T-shirts and try them on immediately..