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Jia-Kai Chou, Ph.D.

https://jjkai.github.io
https://www.linkedin.com/in/jjkai/
Phone: +1 626-566-5381
email: jiakai.chou@gmail.com

Summary

I design visualization and interactive systems to support effective data exploration and analytics. I constantly collaborate with experts in different domains, such as healthcare, neuroscience, and cell biology, and help them address research questions in their fields. I also focus on the privacy preserving aspect of user information while sharing, processing, and gaining insights from the data.

Research keywords: user-centered study design, evaluation and analysis, visual data analytics, privacy aware data visualization, image processing/retrieval

Employment & Experience

Jan. 2015 - Present — Post-Doctoral Researcher at University of California, Davis

Supervised more than 10 student researchers, including 5 Ph.D. students and 4 Master's students, in various research projects. Conduct research in designing and developing visual approaches and systems for supporting effective data analysis. Primary topics include:

- Privacy aware visualization design.
- Explanatory visualization & visualization for storytelling.
- Visual analytics system and interface design.

Oct. 2013 - Nov. 2014 — Assistant IT Coordinator (Alternative Military Service) at Department of Information Technology, Taipei City Government

Coordinated with FISU's IT&C consultant for planning a $1-billion NTD budget on IT&C equipment and software systems for 2017 Taipei Universiade.

Feb. 2012 - Oct. 2012 — Visiting Student at University of California, Davis

Studied the performance of audio-augmented visualization.

Summer 2010 — Summer Intern at Trend Micro, Inc.

Integrated multiple visualization toolkits for network user behavior analysis.

Sep. 2007 - Jul. 2013 — Graduate Student Research Assistant at National Taiwan University of Science and Technology

Designed algorithms and developed systems for multimedia applications:

- Interactive systems for simulating facial features and hairstyle swapping in images.
- Privacy aware image, video, and volumetric data storage and processing.
- Visual analysis of time-varying network data.

Education

Jul. 2013 — Ph.D., Information Management | Advisor: Prof. Chuan-Kai Yang
National Taiwan University of Science and Technology
Dissertation: Privacy Preserving Multimedia Data Processing

Jul. 2009 — M.S., Information Management | Advisor: Prof. Chuan-Kai Yang
National Taiwan University of Science and Technology
Thesis: Virtual Haircut and Hairstyle Cloning

Jul. 2007 — B.S., Information Management
National Taiwan University of Science and Technology

Honors & Awards

2017 Winner of PacificVis 2017 Visual Storytelling Contest

2016 Honorable Mention Paper Award, Siggraph Asia 2016 Symposium on Visualization

2015 Post-doctoral Research Abroad Grant, Ministry of Science & Technology, Taiwan

2015 Winner of Originality in IEEE VGTC VPG International Data-Visualization Contest

2012 Ph.D. Student Study Abroad Scholarship, Ministry of Science & Technology, Taiwan

Skills

Programming Experience: Python, R, Matlab, C/C++, SQL
Web Development: Javascript, Node.js, Express, D3.js, CSS
User Research: between- and within-subject study design and analysis, Qualtrics
Other: OpenGL, Qt, LaTex, Git, TensorFlow

Selected Publications

- Xumeng Wang, **Jia-Kai Chou**, Wei Chen, Huihua Guan, Wenlong Chen, Tianyi Lao, and Kwan-Liu Ma. A Utility-aware Visual Approach for Anonymizing Multi-attribute Tabular Data. IEEE Transactions on Visualization and Computer Graphics (in Proceedings of IEEE VAST 2017), 24(1):351-360, 2018
- Maksim Gomov, **Jia-Kai Chou**, Jianping Kelvin Li, Soman Sen, Kiho Cho, Nam Tran, and Kwan-Liu Ma. Aiding Infection Analysis and Diagnosis Through Temporally-Contextualized Matrix Representations. IEEE VIS 2017 Workshop on Visual Analytics in Healthcare (VAHC 2017)
- **Jia-Kai Chou**, Chris Bryan, and Kwan-Liu Ma. Privacy Preserving Visualization for Social Network Data with Ontology Information. In Proceedings of 2017 IEEE Pacific Visualization Symposium
- Takanori Fujiwara, **Jia-Kai Chou**, Andrew M McCullough, Charan Ranganath, and Kwan-Liu Ma. A Visual Analytics System for Brain Functional Connectivity Comparison across Individuals, Groups, and Time Points. In Proceedings of 2017 IEEE Pacific Visualization Symposium
- **Jia-Kai Chou**, Yang Wang, and Kwan-Liu Ma. Privacy Preserving Event Sequence Data Visualization using a Sankey Diagram-like Representation. ACM SIGGRAPH ASIA 2016 Symposium on Visualization (Best Paper Honorable Mention Award)
- **Jia-Kai Chou** and Chuan-Kai Yang. Obfuscated Volume Rendering. The Visual Computer 32(12):1593-1604, 2016
- **Jia-Kai Chou**, Chuan-Kai Yang, and Hsing-Ching Chang. Encryption Domain Content-based Image Retrieval and Convolution through a Block-based Transformation Algorithm. Multimedia Tools and Applications 75(21):13805-13832, 2016
- Chuan Wang, **Jia-Kai Chou**, Kwan-Liu Ma, Arpad Karsai, Gang-Yu Liu, Ying X. Liu, Evgeny Ogorodnik, and Victoria Tran. An Interactive Visual Analysis Tool for Cellular Behavior Studies using Large Collections of Microscopy Videos. 2016 IEEE International Conference on Multimedia Big Data
- **Jia-Kai Chou** and Chuan-Kai Yang. PaperVis: Literature Review Made Easy. Computer Graphics Forum (EuroVis 2011), 30(3):721-730, 2011