

# Jia-Kai CHOU, Ph.D.

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## SUMMARY

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I design and implement visualizations and interactive systems to support effective data exploration and analytics. To assess the effectiveness of the visualizations and systems that I create, I employ user-centered design principles for both quantitative and qualitative evaluation. My work involves close collaboration with domain experts and helps 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.

## SKILLS

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**UX Research:** Controlled user study design, Quantitative analysis (within-subjects, between-subjects and mixed design and analysis: ANOVA, t-test, error correction, etc.), Qualitative analysis (think-aloud, expert interviews), Survey/Questionnaire design (Qualtrics), Usability study, Complete/incomplete block design and analysis, Counter-balancing (Latin Square)

**Web Development:** Javascript, Node.js, Express, D3.js, CSS

**Programming Experience:** Python (Pandas, NumPy, scikit-learn), R, Matlab, C/C++, SQL

**Other:** OpenGL, Qt, LaTeX, Git, TensorFlow

## EMPLOYMENT & EXPERIENCE

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| JAN. 2015<br>- PRESENT   | Post-Doctoral Researcher at UNIVERSITY OF CALIFORNIA, DAVIS<br>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: <ul style="list-style-type: none"> <li>• Privacy aware visualization design.</li> <li>• Explanatory visualization &amp; visualization for storytelling.</li> <li>• Visual analytics system and interface design.</li> </ul> |
| OCT. 2013<br>- NOV. 2014 | Assistant IT Coordinator (Alternative Military Service) at<br>DEPARTMENT OF INFORMATION TECHNOLOGY, Taipei City Government<br>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<br>- OCT. 2012 | Visiting Student at UNIVERSITY OF CALIFORNIA, DAVIS<br>Studied the performance of audio-augmented visualization.   |
| SUMMER 2010              | Summer Intern at TREND MICRO, INC.<br>Integrated multiple visualization toolkits for network user behavior analysis.   |
| SEP. 2007<br>- JUL. 2013 | Graduate Student Research Assistant at<br>National Taiwan University of Science and Technology<br>Designed algorithms and developed systems for multimedia applications: <ul style="list-style-type: none"> <li>• Interactive systems for simulating facial features and hairstyle swapping in images.</li> <li>• Privacy aware image, video, and volumetric data storage and processing.</li> <li>• Visual analysis of time-varying network data.</li> </ul>  |

## EDUCATION

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| JUL. 2013 | Ph.D., Information Management<br>National Taiwan University of Science and Technology<br>Dissertation: Privacy Preserving Multimedia Data Processing | Advisor: Prof. Chuan-Kai Yang |
| JUL. 2009 | M.S., Information Management<br>National Taiwan University of Science and Technology<br>Thesis: Virtual Haircut and Hairstyle Cloning                | Advisor: Prof. Chuan-Kai Yang |
| JUL. 2007 | B.S., Information Management<br>National Taiwan University of Science and Technology   |                               |

## HONORS & AWARDS

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| 2017 | Winner of PacificVis 2017 Visual Storytelling Contest                           |
| 2016 | Honorable Mention Paper Award, Siggraph Asia 2016 Symposium on Visualization    |
| 2015 | Winner of Originality in IEEE VGTC VPG International Data-Visualization Contest |

## 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*