Junpeng Wang

Research Scientist, Visa Research

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Education

May 2019 **Ph.D. in Computer Science**, *The Ohio State University*, Columbus, OH, USA
Research Interests: ***Explainable AI, Visual Analytics, Deep Learning***
Dissertation: Interpreting and Diagnosing Deep Learning Models: A Visual Analytics Approach
Advisor: Dr. Han-Wei Shen

Dec. 2018 **M.S. in Computer Science**, *The Ohio State University*, Columbus, OH, USA
Major: Computer Graphics; Minor: Artificial Intelligence, High-Performance Computing
Advisor: Dr. Han-Wei Shen

May 2015 **M.S. in Computer Science & Applications**, *Virginia Tech*, Blacksburg, VA, USA
Research Interests: Computer Graphics & Visualization, GPGPU, Parallel Computing
Advisor: Dr. Yong Cao

Jun. 2011 **B.E. in Software Engineering**, *Nankai University*, Tianjin, P.R.China
Thesis Title: "The Principle and Application of Collision Detection in 3D World"
The Outstanding Undergraduate Thesis Award

Honors & Awards

2023 AI 2000 Most Influential Scholar Honorable Mention in Visualization, AMiner
2023 **Best Paper Honorable Mention Award**, IEEE PacificVis Conference
2023 **Best Visualization Notes Award**, IEEE PacificVis Conference
2022 AI 2000 Most Influential Scholar Honorable Mention in Visualization, AMiner
2021 **Best Reviewer Award**, IEEE TVCG
2019 **Best Paper Award**, IEEE VIS (SciVis) Conference
2019 Graduate Research Award, Dept. of Computer Science and Engineering, OSU
2019 **Best Poster Award**, OSU CSE Annual Poster Exhibition
2018 **Best Paper Honorable Mention Award**, IEEE VIS (VAST) Conference
2018 **Best Paper Award**, IEEE PacificVis Conference
2013 Pratt Fellowship, Department of Computer Science, Virginia Tech
2011 The Outstanding Undergraduate Thesis Award, Nankai University
2011 Honorable Mention, Mathematical Contest in Modeling (MCM)
2006 Certificate of Distinction, American Mathematics Contests

Full-Time Employment

- Visa Research, Foster City, CA, USA

May 2025 - Now **Sr. Staff Research Scientist (Director)**, *Foundational AI Team*
Drive the adoption of visualization & visual analytics in large-scale industrial applications. Lead projects on LLM-finetuning, LLM performance leader-board, LLM-powered agentic coding/commerce, Agent memory management, and more interpretable AI.

Feb 2022 - May 2025 **Staff Research Scientist IV (Sr. Consultant)**, *Foundational AI Team*
Investigate visualization & visual analytics techniques that strengthen the interpretability and trustworthiness of AI systems.
Lead projects on LLM-based AI agents, fraud detection, graph-based feature extractions, transaction data analysis, and explainable deep learning.

Jun 2019 - Feb 2022 **Staff Research Scientist**, *Risk Modeling Team (Palo Alto, CA)*
Develop advanced visualization techniques to support anti-money laundering (AML), anomaly detection, and fraud detection in financial systems.
Conduct research on cutting-edge visualization & visual analytics techniques for interpreting and diagnosing machine learning models.

Industrial Internships

• Visa Research, Palo Alto, CA, USA

May 2018 - Aug 2018 **Ph.D. Research Intern**, *Data Analytics Team*
Interpreting and diagnosing DNNs through surrogate models and interactive perturbations;
Developing interactive visualization system for model interpretation.

May 2017 - Aug 2017 **Ph.D. Research Intern**, *Data Analytics Team*
Analyzing and interpreting GAN models and their usage in adversarial attacks;
Developing interactive visualization system using JavaScript/Python.

• Qualcomm Inc., San Diego, CA, USA

May 2014 - Aug 2014 **Software Engineer Intern**, *Linux Display Multimedia Team*
Panel/Display driver development;
Panel/Display driver testing with Lua scripts.

May 2013 - Aug 2013 **Software Engineer Intern**, *Qualcomm Innovation Center*
Interned in the Graphics Team for Adreno graphics driver development;
Creating APK for Android OpenGL ES applications.

• Air Force Research Laboratory (AFRL), Eglin AFB, FL, USA

Jun 2012 - Aug 2012 **Ph.D. Research Intern**
Interned for the Research in Aerial Systems Technologies (RAST) Program;
Worked on in-situ visualization of Computational Fluid Dynamics (CFD) simulations.

• Sun Microsystems (China) Co., Ltd.

Apr 2010 - May 2010 **Software Engineer Intern**, *Beijing*, China
Web application development with Java.

Oct 2009 - Jan 2010 **Software Engineer Intern**, *Beijing*, China
Content Management System (CMS) development with Java.

Publications

• Books

[1] Shixia Liu, Weikai Yang, **Junpeng Wang**, Jun Yuan, "Visualization for Artificial Intelligence", *Synthesis Lectures on Visualization, Springer Cham*, 2025.

• Dissertation

[2] **Junpeng Wang**, "Interpreting and Diagnosing Deep Learning Models: A Visual Analytics Approach", *Doctoral dissertation (link), The Ohio State University*, Advisor: Han-Wei Shen, 2019.

• Refereed Journal Articles

[3] **Junpeng Wang**, Yuzhong Chen, Menghai Pan, Chin-Chia Michael Yeh, Mahashweta Das, "Illuminating LLM Coding Agents: Visual Analytics for Deeper Understanding and Enhancement", *IEEE Transactions on Visualization and Computer Graphics*, 2026 (Proceedings of IEEE PacificVis 2026).

[4] Guanchu Wang, Yuzhong Chen, Huiyuan Chen, Xiran Fan, **Junpeng Wang**, Xiaoting Li, Mingzhi Hu, Chia-Yuan Chang, Xia Hu, "Advancing Table Understanding of Large Language Models via Feature Re-ordering", *ACM SIGKDD Explorations Newsletter*, 27(1):112-123, 2025.

[5] Guan Li, Yang Liu, Guihua Shan, Shiyu Cheng, Weiqun Cao, **Junpeng Wang**, Ko-Chih Wang, "ParamsDrag: Interactive Parameter Space Exploration via Image-Space Dragging", *IEEE Transactions on Visualization and Computer Graphics*, 31(1):624-634, 2025 (Proceedings of IEEE VIS 2024).

[6] **Junpeng Wang**, Shixia Liu, Wei Zhang, "Visual Analytics For Machine Learning: A Data Perspective Survey", *IEEE Transactions on Visualization and Computer Graphics*, 30(12):7637-7656, 2024.

[7] Takanori Fujiwara, Kostiantyn Kucher, **Junpeng Wang**, Rafael M. Martins, Andreas Kerren, and Anders Ynnerman, "Adversarial Attacks on Machine Learning-Aided Visualizations", *Journal of Visualization*, 2025(28):133-151, 2025.

[8] Yiran Li, **Junpeng Wang**, Prince Aboagye, Michael Yeh, Yan Zheng, Liang Wang, Wei Zhang, Kwan-Liu Ma, "Visual Analytics for Efficient Image Exploration and User-Guided Image Captioning", *IEEE Transactions on Visualization and Computer Graphics*, 30(6):2875-2887, 2024 (Proceedings of IEEE PacificVis).

[9] Guan Li, **Junpeng Wang**, Yang Wang, Guihua Shan, Ying Zhao, "An In-Situ Visual Analytics Framework for Deep Neural Networks", *IEEE Transactions on Visualization and Computer Graphics*, 30(10):6770-6786, 2024.

[10] Archit Rathore, Sunipa Dev, Jeff M. Phillips, Vivek Srikumar, Yan Zheng, Chin-Chia Michael Yeh, **Junpeng Wang**, Wei Zhang, Bei Wang, "VERB: Visualizing and Interpreting Bias Mitigation Techniques for Word Representations", *ACM Transactions on Interactive Intelligent Systems (TiiS), 14(1):1-34, 2024.*

[11] Yiran Li, **Junpeng Wang**, Xin Dai, Liang Wang, Chin-Chia Michael Yeh, Yan Zheng, Wei Zhang, Kwan-Liu Ma, "How Does Attention Work in Vision Transformers? A Visual Analytics Attempt", *IEEE Transactions on Visualization and Computer Graphics*, 29(6):2888-2900, 2023 (❀ **IEEE PacificVis 2023 Best Paper Honorable Mention Award**).

[12] Yamei Tu, Olga Li, **Junpeng Wang**, Han-Wei Shen, Przemek Powałko, Irina Tomescu-Dubrow, Kazimierz M. Slomczynski, Spyros Blanas, J. Craig Jenkins, "SDRQuerier: A Visual Querying Framework for Cross-National Survey Data Recycling", *IEEE Transactions on Visualization and Computer Graphics*, 29(6):2862-2874, 2023 (Proceedings of IEEE PacificVis).

[13] Yiran Li, **Junpeng Wang**, Takanori Fujiwara, Kwan-Liu Ma, "Visual Analytics of Neuron Vulnerability to Adversarial Attacks on Convolutional Neural Networks", *ACM Transactions on Interactive Intelligent Systems (TiiS), 13(4):1-26, 2023.*

[14] **Junpeng Wang**, Liang Wang, Yan Zheng, Michael Yeh, Shubham Jain, Wei Zhang, "Learning-From-Disagreement: A Model Comparison and Visual Analytics Framework", *IEEE Transactions on Visualization and Computer Graphics*, 29(12):3809-3825, 2023.

[15] Haoyu Li, **Junpeng Wang**, Yan Zheng, Liang Wang, Wei Zhang, Han-Wei Shen, "Compressing and Interpreting Word Embeddings with Latent Space Regularization and Interactive Semantics Probing", *Information Visualization*, 22(1):52-68 2022.

[16] **Junpeng Wang**, Wei Zhang, Hao Yang, Chin-Chia Michael Yeh, Liang Wang, "Visual Analytics for RNN-Based Deep Reinforcement Learning", *IEEE Transactions on Visualization and Computer Graphics*, 28(12):4141-4155, 2022.

[17] Xiaonan Ji, Yamei Tu, Wenbin He, **Junpeng Wang**, Han-Wei Shen, Po-Yin Yen, "USEVis: Visual Analytics of Attention-based Neural Embedding in Information Retrieval", *Visual Informatics*, 5(2):1–12, 2021, Elsevier.

[18] Guan Li, **Junpeng Wang**, Han-Wei Shen, Kaixin Chen, Guihua Shan, Zhonghua Lu, "CNNPruner: Pruning Convolutional Neural Networks with Visual Analytics", *IEEE Transactions on Visualization and Computer Graphics*, 27(2):1364–1373, 2021 (Proceedings of IEEE VIS (VAST) 2020).

[19] Wenbin He, **Junpeng Wang**, Hanqi Guo, Ko-Chih Wang, Han-Wei Shen, Mukund Raj, Youssef S. G. Nashed, Tom Peterka, "InSituNet: Deep Image Synthesis for Parameter Space Exploration of Ensemble Simulations", *IEEE Transactions on Visualization and Computer Graphics*, 26(1):23–33, 2020 (❀ **IEEE VIS (SciVis) 2019 Best Paper Award**).

[20] Wenbin He, **Junpeng Wang**, Hanqi Guo, Han-Wei Shen, Tom Peterka, "CECAV: Collective Ensemble Comparison and Visualization using Deep Neural Networks", *Visual Informatics*, 4(2):109–121, 2020, Elsevier.

[21] **Junpeng Wang**, Subhashis Hazarika, Cheng Li, Han-Wei Shen, "Visualization and Visual Analysis of Ensemble Data: A Survey", *IEEE Transactions on Visualization and Computer Graphics*, 25(9):2853–2872, 2019.

[22] **Junpeng Wang**, Liang Gou, Wei Zhang, Hao Yang, Han-Wei Shen, "DeepVID: Deep Visual Interpretation and Diagnosis for Image Classifiers via Knowledge Distillation", *IEEE Transactions on Visualization and Computer Graphics*, 25(6):2168–2180, 2019 (Proceedings of IEEE PacificVis 2019).

[23] **Junpeng Wang**, Liang Gou, Han-Wei Shen, Hao Yang, "DQNViz: A Visual Analytics Approach to Understand Deep Q-Networks", *IEEE Transactions on Visualization and Computer Graphics*, 25(1):288–298, 2019 (❀ **IEEE VIS (VAST) 2018 Best Paper Honorable Mention Award**).

[24] **Junpeng Wang**, Xiaotong Liu, Han-Wei Shen, "High-Dimensional Data Analysis with Subspace Comparison Using Matrix Visualization", *Information Visualization*, 18(1):94–109, 2019.

[25] **Junpeng Wang**, Liang Gou, Hao Yang, Han-Wei Shen, "GANViz: A Visual Analytics Approach to Understand the Adversarial Game", *IEEE Transactions on Visualization and Computer Graphics*, 24(6):1905–1917, 2018 (❀ **IEEE PacificVis 2018 Best Paper Award**).

[26] **Junpeng Wang**, Xiaotong Liu, Han-Wei Shen, Guang Lin, "Multi-Resolution Climate Ensemble Parameter Analysis with Nested Parallel Coordinates Plots", *IEEE Transactions on Visualization and Computer Graphics*, 23(1):81–90, 2017 (Proceedings of IEEE VIS (VAST) 2016).

[27] **Junpeng Wang**, Fei Yang, Yong Cao, "A Cache-Friendly Sampling Strategy for Texture-Based Volume Rendering on GPU", *Visual Informatics*, 1(2):92–105, 2017, Elsevier.

- Refereed Conference Papers

[28] Michael Yeh, Uday Singh Saini, Xin Dai, Xiran Fan, Shubham Jain, Yujie Fan, Jiarui Sun, **Junpeng Wang**, Menghai Pan, Yingtong Dou, Yuzhong Chen, Vineeth Rakesh, Liang Wang, Yan Zheng, Mahashweta Das, "TREASURE: A Transformer-Based Foundation Model for High-Volume Transaction Understanding", *Proceedings of the 32nd ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD)*, 2026.

[29] **Junpeng Wang**, Michael Yeh, Uday Singh Saini, Mahashweta Das, "Visual Attention Exploration in Vision-Based Mamba Models", *The 18th IEEE Pacific Visualization Conference (PacificVis)*, 2025.

[30] Michael Yeh, Vivian Lai, Uday Singh Saini, Xiran Fan, Yujie Fan, **Junpeng Wang**, Xin Dai, Yan Zheng, "Empowering Time Series Forecasting with LLM-Agents", *IEEE International Conference on Big Data*, 2025.

[31] Jiarui Sun, Michael Yeh, Yujie Fan, Xin Dai, Xiran Fan, Zhimeng Jiang, Uday Singh Saini, Vivian Lai, **Junpeng Wang**, Huiyuan Chen, Zhongfang Zhang, Yan Zheng, Girish Chowdhary, "EiFormer: Improving Inverted Transformers for Efficient Time Series Forecasting in Large-Scale Spatial-Temporal Data", *IEEE International Conference on Big Data*, 2025.

[32] Michael Yeh, Xiran Fan, Zhimeng Jiang, Yujie Fan, Huiyuan Chen, Uday Singh Saini, Vivian Lai, Xin Dai, **Junpeng Wang**, Zhongfang Zhuang, Liang Wang, Yan Zheng, "UltraSTF: Ultra-Compact Model for Large-Scale Spatio-Temporal Forecasting", *IEEE International Conference on Big Data*, 2025.

[33] Liang Wang, Shubham Jain, Yingtong Dou, **Junpeng Wang**, Michael Yeh, Yujie Fan, Yan Zheng, Xin Dai, Zhongfang Zhuang, Uday Singh Saini, Wei Zhang, Mahashweta Das., "Follow the Crowd but Keep Myself: Understanding the Role of Crowd Wisdom and Individual User Taste in Rating Prediction", *Computational Science and Computational Intelligence*, 2025.

[34] Michael Yeh, Yujie Fan, Xin Dai, Uday Singh Saini, Vivian Lai, Prince Osei Aboagye, **Junpeng Wang**, Huiyuan Chen, Yan Zheng, Zhongfang Zhuang, Liang Wang, Wei Zhang, "RPMixer: Shaking Up Time Series Forecasting with Random Projections for Large Spatial-Temporal Data", *Proceedings of the 30th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD)*, 2024.

[35] **Junpeng Wang**, Michael Yeh, Yujie Fan, Xin Dai, Yan Zheng, Liang Wang, Wei Zhang, "PromptLandscape: Guiding Prompts Exploration and Analysis with Visualization", *The 17th IEEE Pacific Visualization Conference (PacificVis)*, 2024.

[36] Audrey Der, Michael Yeh, Xin Dai, Huiyuan Chen, Yan Zheng, Yujie Fan, Zhongfang Zhuang, Vivian Lai, **Junpeng Wang**, Liang Wang Wei Zhang, Eamonn Keogh, "A Systematic Evaluation of Generated Time Series and Their Effects in Self-Supervised Pretraining", *The 33rd ACM International Conference on Information and Knowledge Management (CIKM)*, 2024.

[37] Audrey Der, Chin-Chia Michael Yeh, Yan Zheng, **Junpeng Wang**, Zhongfang Zhuang, Liang Wang, Wei Zhang, Eamonn Keogh, "Pupae: Intuitive and actionable explanations for time series anomalies", *Proceedings of the 2024 SIAM International Conference on Data Mining (SDM)*, 2024.

[38] Michael Yeh, Yan Zheng, Menghai Pan, Huiyuan Chen, Zhongfang Zhuang, **Junpeng Wang**, Liang Wang, Wei Zhang, Jeff M. Phillips, Eamonn Keogh, "Sketching Multidimensional Time Series for Fast Discord Mining", *IEEE International Conference on Big Data*, 2023.

[39] Audrey Der, Michael Yeh, Yan Zheng, **Junpeng Wang**, Huiyuan Chen, Zhongfang Zhuang, Liang Wang, Wei Zhang, and Eamonn Keogh, "Time Series Synthesis Using the Matrix Profile for Anonymization", *IEEE International Conference on Big Data*, 2023.

[40] Michael Yeh, Huiyuan Chen, Xin Dai, Yan Zheng, Yujie Fan, Vivian Lai, **Junpeng Wang**, Audrey Der, Zhongfang Zhuang, Liang Wang, and Wei Zhang, "Temporal Treasure Hunt: Content-based Time Series Retrieval System for Discovering Insights", *IEEE International Conference on Big Data*, 2023.

[41] Michael Yeh, Huiyuan Chen, Yujie Fan, Xin Dai, Yan Zheng, Vivian Lai, **Junpeng Wang**, Zhongfang Zhuang, Liang Wang, Wei Zhang, and Eamonn Keogh, "Ego-Network Transformer for Subsequence Classification in Time Series Data", *IEEE International Conference on Big Data*, 2023.

[42] Dongyu Zhang, Liang Wang, Xin Dai, Shubham Jain, **Junpeng Wang**, Yujie Fan, Michael Yeh, Yan Zheng, Zhongfang Zhuang, Wei Zhang, "FATA: Field and Time-Aware Transformer for Sequential Tabular Data", *The 32nd ACM International Conference on Information and Knowledge Management (CIKM)*, 2023.

[43] Yujie Fan, Michael Yeh, Huiyuan Chen, Yan Zheng, Liang Wang, **Junpeng Wang**, Xin Dai, Zhongfang Zhuang, Wei Zhang, "Spatial-temporal Graph Boosting Network: Enhancing Spatial-temporal Graph Neural Networks via Gradient Boosting", *The 32nd ACM International Conference on Information and Knowledge Management (CIKM)*, 2023.

[44] Michael Yeh, Huiyuan Chen, Xin Dai, Yan Zheng, **Junpeng Wang**, Vivian Lai, Yujie Fan, Audrey Der, Zhongfang Zhuang, Liang Wang, Wei Zhang, Jeff Phillips, "An Efficient Content-based Time Series Retrieval System", *The 32nd ACM International Conference on Information and Knowledge Management (CIKM)*, 2023.

[45] Michael Yeh, Xin Dai, Huiyuan Chen, Yan Zheng, Yujie Fan, Audrey Der, Vivian Lai, Zhongfang Zhuang, **Junpeng Wang**, Liang Wang, Wei Zhang, "Toward a Foundation Model for Time Series Data", *The 32nd ACM International Conference on Information and Knowledge Management (CIKM)*, 2023.

[46] Yujie Fan, Michael Yeh, Huiyuan Chen, Liang Wang, Zhongfang Zhuang, **Junpeng Wang**, Xin Dai, Yan Zheng, Wei Zhang, "Spatial-Temporal Graph Sandwich Transformer for Traffic Flow Forecasting", *European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases (ECML-PKDD)*, 2023.

[47] Huiyuan Chen, Michael Yeh, Yujie Fan, Yan Zheng, **Junpeng Wang**, Vivian Lai, Mahashweta Das, Hao Yang, "Sharpness-Aware Graph Collaborative Filtering", *The 46th International ACM SIGIR Conference on Research and Development in Information Retrieval (SIGIR)*, 2023.

[48] Prince Osei Aboagye, Yan Zheng, Michael Yeh, **Junpeng Wang**, Zhongfang Zhuang, Huiyuan Chen, Liang Wang, Wei Zhang, Jeff M Phillips, "Interpretable Debiasing of Vectorized Language Representations with Iterative Orthogonalization", *Proceedings of the 10th International Conference on Learning Representations (ICLR)*, 2023.

[49] Yan Zheng, **Junpeng Wang**, Michael Yeh, Yujie Fan, Huiyuan Chen, Liang Wang, Wei Zhang, "EmbeddingTree: Hierarchical Exploration of Entity Features in Embedding", *The 16th IEEE Pacific Visualization Symposium (PacificVis)*, 2023 (❀ **IEEE PacificVis 2023 Best Visualization Notes Award**).

[50] Liang Wang, **Junpeng Wang**, Yan Zheng, Shubham Jain, Michael Yeh, Zhongfang Zhuang, Javid Ebrahimi, Wei Zhang, "Learning from Disagreement for Event Detection", *IEEE International Conference on Big Data*, 2022.

[51] Audrey Der, Michael Yeh, Renjie Wu, **Junpeng Wang**, Yan Zheng, Zhongfang Zhuang, Liang Wang, Wei Zhang, Eamonn Keogh, "Matrix Profile XXVII: A Novel Distance Measure for Comparing Long Time Series", *IEEE International Conference on Knowledge Graph (ICKG)*, 2022.

[52] Prince Osei Aboagye, Yan Zheng, Michael Yeh, **Junpeng Wang**, Zhongfang Zhuang, Huiyuan Chen, Liang Wang, Wei Zhang, Jeff M. Phillips, "Quantized Wasserstein Procrustes Alignment of Word Embedding Spaces", *Association for Machine Translation in the Americas (AMTA)*, 2022.

[53] Michael Yeh, Mengting Gu, Yan Zheng, Huiyuan Chen, Javid Ebrahimi, Zhongfang Zhuang, **Junpeng Wang**, Liang Wang, Wei Zhang, "Embedding Compression with Hashing for Efficient Representation Learning in Graph", *Proceedings of the 28th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD)*, 2022.

[54] Prince Osei Aboagye, Jeff Phillips, Yan Zheng, Michael Yeh, **Junpeng Wang**, Wei Zhang, Liang Wang, Hao Yang, "Normalization of Language Embeddings for Cross-Lingual Alignment", *Proceedings of the 10th International Conference on Learning Representations (ICLR)*, 2022.

[55] Michael Yeh, Yan Zheng, **Junpeng Wang**, Huiyuan Chen, Zhongfang Zhuang, Wei Zhang, Eamonn Keogh, "Error-Bounded Approximate Time Series Joins Using Compact Dictionary Representations of Time Series", *SIAM International Conference on Data Mining (SDM)*, 2022.

[56] Michael Yeh, Zhongfang Zhuang, **Junpeng Wang**, Yan Zheng, Javid Ebrahimi, Ryan Mercer, Liang Wang, Wei Zhang, "Online Multi-Horizon Transaction Metric Estimation with Multi-Modal Learning in Payment Networks", *The 30th ACM International Conference on Information and Knowledge Management (CIKM)*, 2021.

[57] **Junpeng Wang**, Wei Zhang, Liang Wang, Hao Yang, "Investigating the Evolution of Tree Boosting Models with Visual Analytics", *The 14th IEEE Pacific Visualization Symposium (PacificVis)*, pp. 176-185, IEEE, 2021.

[58] **Junpeng Wang**, Wei Zhang, Hao Yang, "SCANViz: Interpreting the Symbol-Concept Association Captured by Deep Neural Networks through Visual Analytics", *The 13th IEEE Pacific Visualization Symposium (PacificVis)*, pp. 51-60, IEEE, 2020.

[59] Michael Yeh, Zhongfang Zhuang, Yan Zheng, Liang Wang, **Junpeng Wang**, Wei Zhang, "Merchant Category Identification Using Credit Card Transactions", *2020 IEEE International Conference on Big Data*, pp. 1736-1744, December 2020.

[60] **Junpeng Wang**, Mai Elshehaly, Yong Cao, "Cylindrical Acceleration Structures for Large Hexahedral Volume Visualization", *The 5th IEEE Symposium on Large Data Analysis and Visualization (LDAV)*, pp. 25–31, IEEE, 2015.

[61] **Junpeng Wang**, Fei Yang, Yong Cao, "Computation-to-Core Mapping Strategies for Iso-Surface Volume Rendering on GPUs", *The 8th IEEE Pacific Visualization Symposium (PacificVis)*, pp. 153-157, IEEE, 2015.

[62] **Junpeng Wang**, Fei Yang, Yong Cao, "Cache-Aware Sampling Strategies for Texture-Based Ray Casting on GPU", *The 4th IEEE Symposium on Large Data Analysis and Visualization (LDAV)*, pp. 19–26, IEEE, 2014.

[63] Weiwei Cai, Xuesong Li, Yong Cao, **Junpeng Wang**, Lin Ma, "Practical Aspects of Three-Dimensional Flame Imaging Using Tomographic Chemiluminescence", *AIAA Science and Technology Forum and Exposition (SciTech)*, pp. 1–9, 2014.

[64] Neda Mohammadi, **Junpeng Wang** and Yong Cao, Mehdi Setareh, "SMATS: Sketch-Based Modeling and Analysis of Truss Systems", *Architectural Research Centers Consortium (ARCC) Conference Repository*, pp. 143–147, 2013.

• Refereed Full-Length Workshop Papers

[65] Zhongfang Zhuang, Michael Yeh, Liang Wang, Wei Zhang, **Junpeng Wang**, "Multi-Stream RNN for Merchant Transaction Prediction", *ACM KDD Workshop on Machine Learning in Finance (MLF)*, San Diego, U.S., August 2020.

[66] Xiao Liu, **Junpeng Wang**, "LatentVis: Investigating and Comparing VariationalAuto-Encoders via Their Latent Space", *CIKM Workshop on Advances in Interpretable Machine Learning and Artificial Intelligence (AIMLAI)*, Galway, Ireland, October 2020.

• Extended Abstracts, Posters, Demos

[67] Archit Rathore, Sunipa Dev, Jeff Phillips, Vivek Srikumar, Yan Zheng, Chin-Chia Michael Yeh, **Junpeng Wang**, Wei Zhang, Bei Wang, "An Interactive Visual Demo of Bias Mitigation Techniques for Word Representations", *The Thirty-fifth Conference on Neural Information Processing Systems*, NeurIPS Demo, 2021.

[68] **Junpeng Wang**, Han-Wei Shen, "Interpreting and Diagnosing Deep Learning Models: A Visual Analytics Approach", *The 13th Annual CSE Student Research Poster Exhibition*, The Ohio State University, 2019 (❀ **Best Poster Award**).

[69] **Junpeng Wang**, Ji Wang, Chris North, "Spectrum: A Visual Analytics Tool to Explore Movement Logs", *The IEEE Conference on Visual Analytics Science and Technology (VAST)*, pp. 175–176, IEEE, 2015.

[70] Mai Elshehaly, Denis Gracanin, Mohamed Gad, **Junpeng Wang** and Hicham Elmongui, "Real-Time Interactive Time Correction on the GPU", *The IEEE Conference on Scientific Visualization (SciVis)*, pp. 145–146, IEEE, 2015.

[71] **Junpeng Wang**, Fei Yang, Yong Cao, "Cache-Aware Iso-Surface Volume Rendering with CUDA", *The IEEE Conference on Scientific Visualization (SciVis)*, IEEE, 2014.

PATENTS

[1] Liang Wang, **Junpeng Wang**, Chiranjeet Chetia, Shi Cao, Harishkumar Sundarji Majithiya, Roshni Ann Samuel, Minghua Xu, Wei Zhang, Hao Yang, "Method, System, and Computer Program Product for Detecting Group Activities in a Network", *US20210209604A1*, (link), published on 2021-07-08.

[2] Zhongfang Zhuang, Michael Yeh, Liang Wang, Wei Zhang, **Junpeng Wang**, "System, Method, and Computer Program Product for Multivariate Event Prediction Using Multi-Stream Recurrent Neural Networks", *US20210224648A1*, (link), published on 2021-07-22.

[3] Michael Yeh, Zhongfang Zhuang, **Junpeng Wang**, Yan Zheng, Javid Ebrahimi, Liang Wang, Wei Zhang, "Time Series Predictive Model for Estimating Metric for a Given Entity", *WO2022169781A1, US20240127035A1, CN116848540A*, (link), published on 2022-08-11.

[4] Sunipa Dev, Yan Zheng, Michael Yeh, **Junpeng Wang**, Wei Zhang, Archit Rathore, "System, Method, and Computer Program Product for Debiasing Embedding Vectors of Machine Learning Models", *WO2022212453A1, CN117223017A, US20240160854A1*, (link), published on 2022-10-06.

[5] **Junpeng Wang**, Liang Wang, Yan Zheng, Michael Yeh, Shubham Jain, Wei Zhang, Zhongfang Zhuang, Hao Yang, "System, Method, and Computer Program Product to Compare Machine Learning Models", *WO2022208401A1*, (link), published on 2022-10-06.

[6] Liang Gou, **Junpeng Wang**, Wei Zhang, Hao Yang, "Method, System, and Computer Program Product for Local Approximation of a Predictive Model", *US11487997B2*, (link), granted on 2022-11-01.

[7] Yan Zheng, Wei Zhang, Michael Yeh, Liang Wang, **Junpeng Wang**, Shubham Jain, Zhongfang Zhuang, "System, Method, and Computer Program Product for Feature Analysis Using an Embedding Tree", *US20240152499A1, WO2022261345A1, CN117546155A*, (link), published on 2022-12-15.

[8] Michael Yeh, Yan Zheng, **Junpeng Wang**, Wei Zhang, Zhongfang Zhuang, "Error-Bounded Approximate Time Series Join Using Compact Dictionary Representation of Time Series", *WO2022260906A1, EP4352650A1, US20240273095A1, CN117441167A*, (link), published on 2022-12-15.

[9] Shi Cao, Chiranjeet Chetia, Liang Wang, **Junpeng Wang**, Morvarid Jamalian, "Computer-Implemented Method, System, and Computer Program Product for Detecting Collusive Transaction Fraud", *US20220414662A1, CN115526640A*, (link), published on 2022-12-29.

[10] Liang Wang, **Junpeng Wang**, Yan Zheng, Shubham Jain, Michael Yeh, Zhongfang Zhuang, Wei Zhang, Hao Yang, "System, Method, and Computer Program Product for Identifying Weak Points in a Predictive Model", *WO2023048708A1*, (link), published on 2023-03-30.

[11] Michael Yeh, Yan Zheng, Huiyuan Chen, Zhongfang Zhuang, **Junpeng Wang**, Liang Wang, Wei Zhang, Mengting Gu, Javid Ebrahimi, "Embedding Compression for Efficient Representation Learning in Graph", *WO2023055614A1*, (link), published on 2023-04-06.

[12] Yan Zheng, Prince Osei Aboagye, Zhongfang Zhuang, Michael Yeh, **Junpeng Wang**, Liang Wang, Javid Ebrahimi, Wei Zhang, "Method, System, and Computer Program Product for Unsupervised Alignment of Embedding Spaces", *WO2023059503A1*, (link), published on 2023-04-13.

[13] **Junpeng Wang**, Wei Zhang, Hao Yang, Michael Yeh, Liang Wang, "System, Method, and Computer Program Product for Dynamic User Interfaces for RNN-Based Deep Reinforcement Machine-Learning Models", *US20230186078A1, WO2021220241A1, CN115427964A*, (link), published on 2023-06-15.

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