

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 - **Sr. Staff Research Scientist (Director)**, Foundational AI Team
- Now Lead projects on LLM-finetuning, LLM performance leader-board, LLM-powered agentic coding/commerce, Agent memory management, and more interpretable AI.

- Feb 2022 - **Staff Research Scientist IV (Sr. Consultant)**, *Foundational AI Team*
May 2025 - Lead projects on LLM-based AI agents, fraud detection, graph-based feature extractions, transaction data analysis, and explainable deep learning.
- Jun 2019 - **Staff Research Scientist**, *Risk Modeling Team (Palo Alto, CA)*
Feb 2022 - Develop advanced techniques for anti-money laundering (AML) and fraud detection. 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 - **Ph.D. Research Intern**, *Data Analytics Team*
Aug 2018 - Interpreting and diagnosing DNNs through surrogate models and interactive perturbations; Developing interactive visualization system for model interpretation.
- May 2017 - **Ph.D. Research Intern**, *Data Analytics Team*
Aug 2017 - 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 - **Software Engineer Intern**, *Linux Display Multimedia Team*
Aug 2014 - Panel/Display driver development; Panel/Display driver testing with Lua scripts.
- May 2013 - **Software Engineer Intern**, *Qualcomm Innovation Center*
Aug 2013 - 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 - **Ph.D. Research Intern**
Aug 2012 - 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 - **Software Engineer Intern**, *Beijing, China*
May 2010 - Web application development with Java.
- Oct 2009 - **Software Engineer Intern**, *Beijing, China*
Jan 2010 - 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 Powalko, 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, "USE-Vis: 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, Yingdong 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, Yingdong 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 Variational Auto-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 El-mongui, "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, Chiranjeev 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.
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21st January, 2026