Tiankai Xie

http://www.tiankaixie.com

Email : txie21@asu.edu

Mobile : +1 914-815-1860

PROFESSIONAL SUMMARY

Ph.D. in Computer Science specializing in visual analytics and explainable AI. Research focuses on visualizing high-dimensional loss functions to enhance machine learning model transparency and reliability, particularly in scientific domains. Develops tools integrating visual analytics and AI principles to improve understanding of complex model behaviors. Skilled in full-stack data pipeline development, with emphasis on improving AI model interpretability and trustworthiness in high-stakes applications.

EDUCATION

Arizona State University		Aug. 2018 – Aug. 2023
Ph.D. in Computer Science; Ross Maciejewski (Ph.D. advisor)		*Tempe, AZ*
Stevens Institute of Technology		Aug. 2015 – May 2017
M.S. in Computer Science		*Hoboken, NJ*
Beijing Forestry University		Sep. 2011 – Jul. 2015
B.S. in Computer Science		*Beijing, China*

PROFESSIONAL EXPERIENCE

AI Researcher	April 2025 – Present
Mad Labs, Mad Realities	*New York City, NY*
Postdoctoral Research Scholar	July 2023 – April 2025
VADER Lab, School of Computing and Augmented Intelligence, Arizona State University	*Tempe, AZ*
Visiting Researcher	May 2024 – Aug. 2024
Machine Learning and Analytics Group, Lawrence Berkeley National Laboratory	*Berkeley, CA*
Graduate Research Associate	Aug. 2018 – Aug. 2023
VADER Lab, School of Computing and Augmented Intelligence, Arizona State University	*Tempe, AZ*
Data Scientist, Intern	May 2021 – Aug 2021
Decision Science Visualization Team, Epsilon Data Management, LLC	*Chicago, IL*
Co-founder	Aug. 2017 – Jul. 2018
Robotgyms Inc.	*San Mateo, CA*

SELECTED PUBLICATIONS

- Xie, Tiankai, Caleb Geniesse, Jiaqing Chen, Yaoqing Yang, Dmitriy Morozov, Michael W. Mahoney, Ross Maciejewski, and Gunther H. Weber. "Evaluating Loss Landscapes from a Topology Perspective." Poster at the NeurIPS 2024 Workshop on Scientific Methods for Understanding Deep Learning, 2024 (Under review)

- Xie, Tiankai, Jiaqing Chen, Yaoqing Yang, Caleb Geniesse, Shi Ge, Ajinkya Chaudhari, John Kevin Cava, Talita Perciano, Michael W. Mahoney, Gunther H. Weber and Ross Maciejewski. "LossLens: Diagnostics for Machine Learning through Loss Landscape Visual Analytics." IEEE Computer Graphics and Applications, 2024 (Under review)

- Kang, Jian, Tiankai Xie, Xintao Wu, Ross Maciejewski, and Hanghang Tong. "Infofair: Information-theoretic Intersectional Fairness." In 2022 IEEE International Conference on Big Data, 2022.

- Xie, Tiankai, Yuxin Ma, Jian Kang, Hanghang Tong, and Ross Maciejewski. "Fairrankvis: A Visual Analytics Framework for Exploring Algorithmic Fairness in Graph Mining Models." IEEE Transactions on Visualization and Computer Graphics, 2021.

- Xie, Tiankai, Yuxin Ma, Hanghang Tong, My T. Thai, and Ross Maciejewski. "Auditing the Sensitivity of Graph-based Ranking with Visual Analytics." IEEE Transactions on Visualization and Computer Graphics, 2020.

- Ma, Yuxin, Tiankai Xie, Jundong Li, and Ross Maciejewski. "Explaining Vulnerabilities to Adversarial Machine Learning through Visual Analytics." IEEE Transactions on Visualization and Computer Graphics, 2019.

INVITED TALKS

- **LossLens: Diagnostics for Machine Learning Models through Loss Landscape Visual Analytics** AI TIME, Jan. 2024.

- **FairRankVis: A Visual Analytics Framework for Exploring Algorithmic Fairness in Graph Mining Models.** IEEE Conference on Visualization and Visual Analytics, Oct. 2021.

- **Auditing the Sensitivity of Graph-based Ranking with Visual Analytics**. IEEE Conference on Visualization and Visual Analytics, Oct. 2020.

- **Explaining vulnerabilities to adversarial machine learning through visual analytics.** IEEE Conference on Visual Analytics Science and Technology (VAST). Oct. 2019, Vancouvor, Canada.

TEACHING EXPERIENCE

- Mentor for undergrad students in the ten-week VADER Lab summer research camp

PROFESSIONAL SERVICE

- Reviewer of IEEE Transactions on Visualization and Computer Graphics, 2024

- Reviewer of IEEE Computer Graphics & Applications, 2024

- Reviewer of IEEE Pacific Visualization Conference, 2024

- Reviewer of ACM Transactions on Intelligent Systems and Technology, 2024

- Reviewer of IEEE Transactions on Visualization and Computer Graphics, 2023

- Reviewer of IEEE Transactions on Visualization and Computer Graphics, 2022

- Reviewer of IEEE Computer Graphics & Applications, 2021

- Reviewer of NeurIPS Workshop on Scientific Methods for Understanding Deep Learning, 2024